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INCREASING THE SUPPLY OF FAMILY HOUSING

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Executive Summary

INCREASING THE SUPPLY OF FAMILY HOUSING

DoD faces a severe shortage of suitable family housing for Military Service members, particularly in cities where housing costs are high and in rural areas where housing is not readily available.

DoD can increase the supply of affordable housing by upgrading existing units, constructing new ones, and locating them more effectively. The most cost-effective actions are to remodel on-base units to create denser, multifamily configurations and to enter into long-term leases for off-base residential units. Efforts to find residential units within reasonable commuting distances and to join with local governments in grant programs for public housing construction and residential housing rehabilitation, are more cost-effective than contracting for construction under existing legislative authorities. Because it is the least cost-effective housing alternative, increased housing allowances should be sought only after all of the other actions have been attempted.

We recommend that the Deputy Assistant Secretary of Defense (Installations) direct installation managers to use the most cost-effective strategy feasible and show evidence of having done so when justifying new construction funding. He should also request changes in existing Office of Management and Budget policy to authorize lease-purchase housing for multiyear rather than a single-year funding. *Keywords:*

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INCREASING THE SUPPLY OF FAMILY HOUSING

The Military Services compete with the private sector for quality personnel. In that competition, they must overcome certain inherent disadvantages – mandated transfers, relatively low salaries, the continuing threat of danger, and the rigors of life in the field, to name a few. To offset those disadvantages, DoD offers a unique inducement – free family housing on base when it is available and tax-free housing allowances when quarters cannot be provided. The Office of the Secretary of Defense views free housing as a major factor in the decisions of personnel to extend their terms of service.

The simplest way to provide housing is to offer on-base family units. In fact, DoD owns almost 400,000 such units worldwide and provides them with utilities and maintenance at no cost, although it requires the occupants to keep the units in good condition and perform limited tasks such as cleaning common areas and cutting grass. In assigning that housing, senior personnel are given priority as a reward for, and incentive to, continued service.

Military construction (MILCON) funding for housing is limited. Those funds must be appropriated by Congress, and MILCON housing must compete with other, higher priority projects, systems, or personnel funding. Thus, DoD must rely on the civilian market to provide the balance of the required units. The current demand at installations within the United States exceeds 100,000 family homes.

Service members who cannot be housed on base receive tax-free allowances to cover most of the cost of off-base housing. DoD's housing objective for off-base families is to make suitable (acceptable and affordable) housing available to the Service member. Acceptable housing is within 1 hour's commuting time, meets minimum square footage requirements and basic structural soundness tests, and has water, heat, and electricity; affordable housing does not require Service members to exceed specified out-of-pocket costs.

For those personnel living off base, a two-tier allowance system is in place. The allowances are based on a National Median Housing Cost (NMHC) that includes both rent and utilities. All off-base personnel receive a Basic Allowance for Quarters

(BAQ) determined DoD-wide by rank. The BAQ is supplemented by a Variable Housing Allowance (VHA), which is determined by rank and location. VHA is calculated by adding a maximum out-of-pocket cost (15 percent of the NMHC) to the BAQ; VHA is then added to meet the Local Median Housing Cost. Affordable housing requires that the Service member pay no more than the maximum out-of-pocket cost, including both rent and utilities, beyond the sum of BAQ and VHA.

There are a number of practical problems associated with DoD's on-base housing and housing allowance procedures.

- The housing benefit is not directed toward those in most need.
- Off-base housing is a financial liability rather than a benefit to a Service member.
- DoD housing tends to exceed local standards for similar socioeconomic groups.
- Legislation enables DoD to buy houses only when a shortage exists and at that time, such houses are most expensive.
- DoD cannot impose its housing standards on Service members and thus cannot force anyone to live in suitable housing.

On-base housing is assigned to senior personnel who can better afford to compete in the housing market than junior enlisted personnel. Low salaries cause junior personnel to be more affected by out-of-pocket cost increases. Although housing may be a reward for continued service, if junior personnel do not re-enlist, no senior-level personnel will be available to receive that reward.

When allowances do not keep pace with the cost of living off-base, as has been the case historically, the real dollar differential must be made up from the base pay of the Service members. That draws sharp economic differences between those living on base and those forced onto the economy.

Military housing contracts specify the minimum required standards for the housing to be provided; those standards demand a modest but clearly middle-income structure, by most civilian community standards. In metropolitan areas, military personnel are low-income people and commercial concerns will not provide middle-income services at low-income prices. Failure by the drafters of requests for proposals (RFPs) for off-base housing to recognize this limitation has resulted in a lack of contractor interest in many housing initiatives to date. In addition, if

communities view contract housing as being unwarrantedly luxurious, they will resist extending the usual tax or utility concessions that reduce the construction costs of off-base military housing.

DoD must draw a distinction between making it possible to afford suitable housing and ensuring that all personnel occupy such housing. Many Service members occupy unsuitable housing, some by choice and most of necessity. To the extent that Service members occupy cheaper but unsuitable housing, average costs and therefore subsequent allowances are driven down, thereby making it impossible to compensate for the true cost of living in suitable housing.

Legislation on housing purchases results in buying houses only when they are most expensive. Housing availability in communities is cyclic and when housing is in short supply, military installations also experience shortages. In order to program new construction, a housing shortage must exist and continue to exist for the entire new construction procurement cycle. During housing shortage periods, all housing is at a cost peak. If local costs decline, the military shortage eases; however, the same number of military families will be overextended when the next cost peak occurs. DoD has no authority to obtain units when the need – and cost – is less severe. In short, the Government "buys high, sells low."

As a result of these housing issues, DoD is always faced with a large number of Service families who are unsuitably housed. The process of relying on pure market forces while allowances are constrained has caused many military housing allowances to become increasingly inadequate, while pressure to reduce Defense spending makes it clear that MILCON funding on the scale required to make serious inroads is impossible. Since the traditional methods of providing housing are inadequate and unaffordable, DoD must search for new methods.

INCREASE THE SUPPLY OF SUITABLE HOUSING

DoD can increase the supply of affordable housing available to Service families using three general approaches:

- Making it possible for those families to occupy units that are currently unavailable or unaffordable
- Upgrading old units to meet DoD standards

- Building new units.

A detailed discussion of the three general approaches is provided in Appendix A with further analysis in Appendices B, C, and D.

Within the approaches reviewed, thirteen specific alternatives were selected for further study. They are:

- *Make Units Available or Affordable*
 - ▶ Intensify the search for suitable units
 - ▶ Engage in long-term leases
 - ▶ Increase housing allowances.
- *Upgrade Old Units*
 - ▶ Remodel on-base units
 - ▶ Rehabilitate off-base units.
- *Build New Units*
 - ▶ MILCON
 - ▶ Section 801 build-to-lease off base
 - ▶ Section 801 build-to-lease on base
 - ▶ Section 801 lease-purchase on base
 - ▶ Section 802 rental guarantee on base
 - ▶ Section 802 rental guarantee off base
 - ▶ Section 2667 land lease on base
 - ▶ Joint ventures in public housing with local agencies.

Each of these alternatives is discussed in the following sections.

MAKE UNITS AVAILABLE OR AFFORDABLE

Intensify the Search for Suitable Units

Service member rentals of individual units are generally guided by the installation Housing Referral Office (HRO). Because of staff constraints, the HRO is

often unable to maintain complete coverage of the residential units in the community. Increased coverage could result in the identification of suitable units, which would reduce the shortage of housing. The coverage could be increased by increasing the staff and information-handling capability of the HRO, or it could be done by engaging commercial property management firms under performance contracts.

Engage in Long-Term Leases

DoD leases residential units for a 10-year period. The initial rent is set at the market value, but rental increases are confined to demonstrable cost increases and are limited by the Consumer Price Index (CPI). That arrangement controls costs to a 10-year adjustment rather than following the current market. With DoD as the renter, units are assigned to military families; the families pay no expenses and receive no housing allowances. That eliminates the discrepancy between the cost of living and Service member housing allowances, which causes the affordability problem.

Increase Housing Allowances

Housing allowances are adjusted to match the actual cost of living in the community and updated constantly to keep pace with increases. The present program includes an out-of-pocket cost set at a percentage of the NMHC; that feature can be retained. The allowance increase could be either a flat rate by grade and location or a reimbursement of expenses up to a ceiling.

UPGRADE OLD UNITS

Remodel On-Base Units

Many on-base buildings can be remodeled to provide an increased number of residential units although the remodeled units would be smaller than the current average. This remodeling could be done by adding rooms or wings to existing family quarters and then subdividing them, or by converting nonresidential buildings such as offices or warehouses. That would reduce the number of personnel requiring off-base housing and would eliminate the need to pay them a housing allowance. After the initial funds for remodeling, DoD would pay only the maintenance costs, which are less than the housing allowances.

Rehabilitate Off-Base Units

In many areas, construction of new housing units is impractical because of the density of existing buildings, and existing off-base housing does not match the needs of the community or military families; it may be in poor condition, or it may be too large. DoD could provide direct loans or guarantees to property owners enabling them to refurbish their units or create multifamily dwellings out of large residences in return for a period of availability at affordable prices to military families. DoD would continue to pay housing allowances under the present formula but would (under the direct loan concept) get a net return by charging interest.

BUILD NEW UNITS

Use Military Construction Funding

DoD provides appropriated funds for the construction of housing on Federal property. The housing is owned and operated by the installation's housing office. Service families assigned to the housing pay no expenses and receive no allowances.

Build-to-Lease Off Base Under Section 801

DoD contracts with a private firm to construct, build, and operate a housing project, and agrees to lease the property in entirety for 20 years at a rent determined in the contract. The contract allows rent increases for demonstrable increases in operating and maintenance (O&M) costs up to the CPI. DoD may not renew the lease but at the end of 20 years may decide to purchase the property at fair market value. Once the property is available, DoD assigns military families to the housing; the families pay no costs and receive no allowances.

Build-to-Lease On Base Under Section 801

This process is the same as the Section 801 off-base project except that DoD obtains a rent reduction in return for providing the land. DoD may also provide utilities and thus reduce O&M costs. At the end of the lease period, DoD may lease the land to the private firm, lease the buildings from the firm, or buy the buildings at fair market value. DoD also has the right to demand that the buildings be removed at the contractor's expense if they impede the installation's mission at that time.

Lease-Purchase On Base Under Section 801

This process is the same as the Section 801 build-to-lease on base process except that at the end of the lease DoD simply takes title to the buildings with no further investment. That solves the irrationality of buying a building that DoD has just finished paying for. DoD is presently authorized to lease-purchase housing, but has not done so due to OMB requirements that a lease-purchase must be budgeted for as if it were being paid in full in the first year. That removes the incentive to undertake any form of lease-purchase.

Guarantee Rental On Base Under Section 802

DoD contracts with a private firm to construct, build, and operate a housing project on base and provides the land to reduce the contractor's cost. The per-unit rent is specified in the contract but is tied to housing allowances. The rent allows increases for demonstrable increases in O&M costs up to the CPI. The contract period cannot exceed 25 years, but the lease may be renewed or DoD may require the contractor to abandon the property. Military families decide whether to live in the housing; the families receive full allowances and pay all costs. In the event that military families do not fill the project, and the contractor is unable to attract civilian occupants, DoD guarantees that 97 percent of the fixed (mostly debt service) costs are recovered.

Guarantee Rental Off Base Under Section 802

This process is the same as the Section 802 on-base process except that DoD provides no land and has no right to take possession of the property at the end of the lease.

Lease On Base Land Under Section 2667

This process works in a manner similar to the Section 802 housing processes except that the legislative authority addresses the ability to lease the on-base land rather than the provision of housing. That focus offers two advantages: the lease period can be up to 50 years, and more important, the use of the land is not restricted to housing projects. Removal of the housing restriction allows the builder to include other revenue-producing activities (consistent with limitations placed by the

installation's needs) that subsidize the housing units to the point at which rents can be reduced to the housing allowance levels.

Join with Local Agencies in Public Housing

DoD provides capital assistance to a local housing agency in developing low-income housing. In return, a number of the units are set aside for military families. This process creates economies of scale and ensures that DoD will share in cost reductions arising from a wide range of local tax and fee incentives.

IDENTIFY THE BEST ALTERNATIVE FOR A SPECIFIC AREA

Case studies of the effectiveness of the alternatives were conducted at four locations in which installations are experiencing severe shortages of affordable housing. Those locations are Washington, DC; San Francisco, CA; San Diego, CA; and Fayetteville, NC, the home of Fort Bragg. Those four sites have very different geographic and economic characteristics; they were selected to test the proposal that alternatives would have different strengths in different environments. In fact, the alternatives maintain a consistent ranking across all locations (see Table 1).

The rankings were developed based on the 40-year life-cycle cost of the alternatives. The 40-year period accounts for the longest reasonable unrenovated life of a structure and allows the introduction of long-term effects of the CPI and housing-cost inflation. Comparisons have been made in terms of net present value (NPV), which allows the different timing of events in the alternatives to be evaluated fairly. In addition, we have assumed a standard project of 300 identical units.

Table 2 shows the life-cycle cost for each of the four case study locations for each alternative for a 40-year period. The footnotes for the Section 802 and Section 2667 alternative values indicate that the cost to build and operate the project exceeds the price that the Government will pay. Table 3 shows the additional subsidy per unit that would be required for the project to have commercial value to the contractor.

Two of the alternatives – intensify property search and joint venture housing – show no defined cost. Those alternatives can be ranked, although a precise life-cycle cannot be determined. Intensifying the property search would require that installations continue to pay housing allowances under the present

TABLE 1
RANKINGS OF ALL ALTERNATIVES

Alternative	Location				Final ranking
	DC	San Francisco	San Diego	Fort Bragg	
Remodel on-base	1	1	1	1	1
Long leases	2	2	3	2	2
Rehabilitation	3	4	4	3	3
Section 802 off-base	4 ^a	3 ^a	2 ^a	4 ^a	4
Intensify property search	5	7	5	5	5
Section 2667	6 ^a	5 ^a	6 ^a	6 ^a	6
Section 802 on-base	7 ^a	6 ^a	7 ^a	7 ^a	7
Joint venture housing	8	8	8	9	8
MILCON	9	9	9	11	9
Section 801 lease-purchase	10	10	10	12	10
Section 801 off-base	11	11	11	10	11
Section 801 on-base	12	12	12	13	12
Increase VHA	13	13	13	8	13

^a Not feasible without rental subsidies (see Table 3).

formula while at the same time adding staff or contracting out for additional effort in the property search. The cost of that alternative, therefore, must be greater than the Section 802 off-base alternative which incurs only the cost of allowances. However, the additional resources are relatively minor — on the order of \$50,000 to \$200,000 per year, depending on the number of employees obtained; the difference between the Section 802 off-base alternative and the least expensive new construction alternative is generally \$10 to \$20 million (in present value terms). We can safely say that intensifying the property search would, therefore, be slightly more expensive than doing nothing and far less expensive than building new units.

Joint venture housing implies a direct subsidy of the construction or operation of housing units by a local government which reduces the cost to the Federal Government by a proportional amount. Again, the exact amount can only be determined on a case-by-case basis after an agreement is formed. However, we can say that such an arrangement would make this alternative at least slightly less

TABLE 2
COMPARATIVE RANKINGS OF ALL ALTERNATIVES
(Millions of dollars; 40-year net present value)

Alternative	Location				Primary differential between locations
	DC	San Francisco	San Diego	Fort Bragg	
Remodel on-base	7	7	5	10	O&M costs versus allowances
Long leases	34	44	34	13	Market rent
Rehabilitation	37	48	35	22	Allowances
Section 802 off-base	38 ^b	45 ^b	33 ^b	22 ^b	Allowances
Intensify property search	d	d	d	d	
Section 2667	41 ^b	48 ^b	40 ^b	27 ^b	Allowances
Section 802 on-base	41 ^b	48 ^b	41 ^b	27 ^b	Allowances
Joint venture housing	d	d	d	d	
MILCON ^a	44	50	44	33	O&M costs ^c
Section 801 lease-purchase	52	58	50	38	Construction
Section 801 off-base	53	70	54	32	Construction
Section 801 on-base	56	64	53	38	Construction
Increase VHA	64	72	59	29	Market rent minus allowances

^a MILCON = Military Construction.

^b Not feasible at this cost level. See Table 3.

^c O&M = operations and maintenance.

^d Exact cost cannot be assigned.

costly than construction without subsidy. In order to approach the cost figures of nonconstruction alternatives, however, the subsidy would have to be on the order of 30 percent of the entire cost. A community that had enough money to afford such a subsidy would most likely be politically embarrassed to provide such a large amount for Federal employee housing at the expense of its own taxpayers. Thus, we can place the joint venture housing alternative slightly below other forms of construction.

Across the range of projects, the only anomaly is the cost-effectiveness of Section 801 off-base housing and increased VHA at Fort Bragg. Those events reflect

TABLE 3
SUBSIDY REQUIREMENTS
(Dollars per month per unit)

Alternative	Location				Primary differential between locations
	DC	San Francisco	San Diego	Fort Bragg	
Section 802 on-base	233	368	350	223	Utilities O&M
Section 802 off-base	242	662	507	198	Land costs/city fees
Section 2667	142	366	303	145	Utilities O&M

the low cost of living in that area. Since the cost of land is low, the cost of moving off base is made up by not having to pay for school aid, which is at the same level as all the other areas studied (and therefore disproportionately high in the generally low-cost Fort Bragg area). Because allowances are not far from the real rental rates, the alternative to increase VHA does not incur major costs in meeting the market level assuming that the closed-system market at Fort Bragg does not rise with allowances.

We tested the alternatives by varying the basic assumptions through as wide a range as possible without using values that are completely beyond reasonable expectations. Rather than provide a mass of numbers, we note only those cases in which an alternative undergoes a significant change of feasibility or ranking.

The most significant finding from all the iterations of this analysis is that the rankings are robust; the range to which variables had to be moved to change a ranking was very extreme. That is shown in Table 4.

CONSIDER GENERAL COST-SAVING MEASURES

Some methods that have been proposed by the private sector would lower costs in all alternatives, particularly in reducing capital requirements. They are not alternatives in their own right, and so are presented here separately for consideration.

TABLE 4
RESULTS OF SENSITIVITY TESTING

Variable	Low	Baseline	High	Observations
Inflation	0%	4%	12%	Inflation at 0% makes 802, 2667 feasible, but eliminates their cost advantages.
Discount rate	4%	9%	14%	At very low discount rates, MILCON and 801 rank 2nd and 3rd. At maximum discount rates, increasing VHA becomes competitive with construction alternatives.
Land cost	\$2,000/per unit	\$14,000/per unit	\$50,000/per unit	At very low cost, 801 off-base is competitive with MILCON. At costs above \$20,000, 801 off-base is most expensive.
MILCON unit size	700 sf	900 sf	1,300 sf	Under 800 sf, MILCON competes with Leases and Rehabilitation. Over 1,100 sf, MILCON is most expensive form of construction, if other unit sizes are held to 900 sf.
Davis-Bacon Act (% of labor cost)	0%	15%	50%	No real effect. High assumed value of Davis-Bacon Act savings improves 802, 2667 feasibility.
Rent increases	4%/yr	6.2%/yr	14%/yr	At very low rates, increasing VHA is competitive with new construction. At very high rates, MILCON and all 801 versions rank 2 through 5; leasing and rehabilitation exceed new construction costs.
BAQ increases	0%/yr	3%/yr	6%/yr	At high increases, MILCON shares 2nd place with Leasing.
Capital cost	7%	11%	15%	No significant effect.

Note: BAQ = Basic Allowance for Quarters.

Consider Blanket Financing

In many projects, investment banks would be interested in financing many units rather than 200 or 300 at a time as is usually the case. A DoD contract with a single financer to cover several projects would reduce the interest rate significantly as overhead and risk are lowered. Section 801 projects are now established to the extent that there is competition among financial institutions and several developers are able to provide their own financing. Blanket financing would be most valuable for the riskier programs (Section 802 and Section 2667) or pilot programs in which financing is not as easy to obtain. The financial firms we interviewed are generally prepared to enter such agreements only for sums in excess of \$100 million, although that amount might be spread over several years. The Deputy Assistant Secretary of

Defense (Installation) should look into blanket financing in depth once the housing program for the FY89 - FY94 period can be forecast.

Investigate Nonstandard Construction

We have not conducted a cost-benefit analysis of nonstandard construction (e.g., mobile homes, geodesic domes, foam structures, etc.) because it has little track record. However, clearly, such construction can provide significant savings. If not now, then in the near future, it will provide quality at least equivalent to the hastily built developments in the private market today. Service-level staffs should follow this industry closely and make use of the technology in pilot projects as soon as satisfactory controls can be placed on the fabrication and installation processes.

Join With Nonprofit Agencies

Nonprofit agencies such as colleges, churches, and some financial concerns [e.g., United Services Automobile Association (USAA), Armed Forces Insurance Exchange] can, by acting as project owners or managers, reduce the cost of an alternative by reducing or removing the profit lines. They often participate in pilot programs to demonstrate feasibility or because they have a long-term interest, and their participation might enable cooperative housing to work. It might reduce the margin on leases under all alternatives, or it could result in the very inexpensive lease of land when the agency has a need for that land in the outyears; build-to-lease would enable the nonprofit agency to end up with facilities of its own without having to sell the land to get the money for the buildings.

Stay in the Equity Business

Some studies have suggested that because DoD's equity value and O&M costs exceed market rents, DoD should sell its property and rely exclusively on the market, paying allowances up to market standards if necessary. That proposition ignores the value of ownership.

For example, DoD could sell all 2,084 residences at Andrews AFB for a reasonable average of \$100,000 apiece and save the annual O&M payments (approximately \$3.5 million). The maximum proceeds could be withdrawn by exhausting the principal and allowances provided to 2,482 families for 40 years (including the 400 families now in unsuitable housing). However, that allowance stream would have to be continued indefinitely for all 2,482 families. This makes the conservative

assumption that housing cost increases will not exceed the national inflation rates (not a good assumption in high-cost markets); at current housing increase rates, only 1,151 families would be housed by such an action. Thus, this proposal is risky and unsound; it disposes of current assets without certain replacement.

Those calculations use a single market. A strategy of closing down bases in high-cost areas and relocating the activities in lower-cost areas could generate large cash flows; however, the political, economic, and military implications of such actions go far beyond the scope of this study.

Consider the Value of Time

All construction activities take time. Under the best of circumstances — available funds, available and appropriate land, and standard designs — such projects will take months. Adding in the time for Government budget preparation and authorization, procurement processes, land searches, and financial investigations, the typical project time is calculated in years rather than months. Those activities also add to the cost of the delivered product.

During those time lapses, costs rise with inflation and real estate appreciation. Urban growth and large, dense housing are generating ever-increasing opposition. Service members dissatisfied with DoD's inability to support them in suitable housing depart the Service. In recent years, stronger pressure on DoD's budget has reduced the ability to fund increased housing units.

Increasing DoD involvement in preoccupancy activities will increase the time to provide the housing units. This time may buy improved units or better financing; it will also incur the cost of increased price and unhoused families. We have not placed a value on this time lag because it varies with installations and situations. Table 2 shows the difference in the cost of the alternatives considered; if DoD managers believe that the cost of waiting exceeds the increased cost of a quicker solution, then the value of time should be considered in the decision as to which alternatives to pursue.

RECOMMENDATIONS

The sensitivity analysis shows that the rankings of the alternatives are quite impervious to normal changes in environmental assumptions. Those rankings should therefore stand as guidelines for action. The acute housing shortages at

many locations make it likely that no alternative can solve the problem alone, but solutions should clearly be attempted in order of their cost-effectiveness until their usefulness is exhausted.

The most cost-effective action is to remodel on-base family housing units to create denser, multifamily configurations. Installation managers should contract for new construction under existing legislative authority only after they have intensified their efforts to enter into long-term leases for off-base residential units, find residential units within reasonable commuting distances, and join with local governments in grant programs for public housing construction and residential housing rehabilitation. Because it is the least cost-effective housing alternative, increased housing allowances should be sought only after the foregoing actions have been attempted.

We recommend that the Deputy Assistant Secretary of Defense (Installations) direct installation managers to use the strategy described above and show evidence of its use when justifying new construction funding. He should also request changes in existing OMB policy to treat lease-purchase housing as a multiyear funding authority rather than a single-year authority.

APPENDIX A

IDENTIFY POTENTIAL SOURCES OF SUITABLE HOUSING

Developing alternative sources of housing requires viewing the community not as a list of suitable units but as a source of units, some of which are suitable and some of which are available. The area in Figure A-1 showing the available, affordable, and acceptable houses, is the pool of potential military housing units. The goal, clearly, is to increase the size of the pool. That increase can be accomplished by:

- Building new units (either on contract or by encouraging commercial efforts) which directly increases the supply of housing
- Fixing dilapidated units or remodeling units into multifamily dwellings, which creates acceptable units out of unacceptable ones
- Positioning military personnel as tenants, which provides access to units which were previously unavailable or unaffordable.

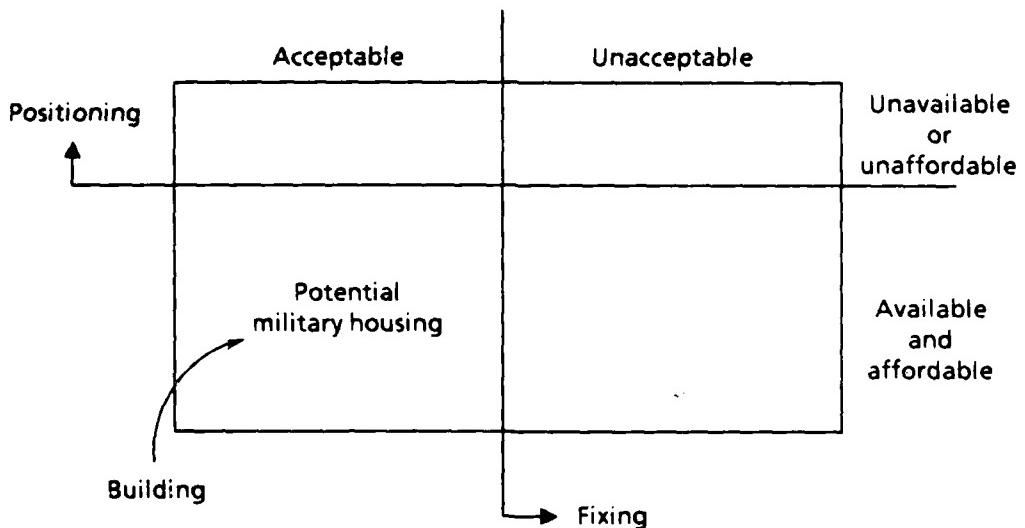


FIG. A-1. REGIONAL INVENTORY OF BUILDINGS

Building, alone, is not the solution. It is neither cost-effective nor (in view of the magnitude of the housing deficit) affordable. The four installations used as case

studies (described in Appendix E) show housing deficits averaging 4,000 families per installation. Attempting to solve such a deficit by building, alone, would require DoD to construct a new town for some 14,000 people at each installation. In addition, all of the families are now present in the communities and living there in currently unsuitable housing. The housing deficit could be reduced as effectively by improving the current stock of houses as by building new ones.

All four communities in the case studies reported an overall vacancy rate for acceptable units of 5 to 7 percent, but Military Housing Referral Offices (HROs) report that vacancies in the price range of most military families are less than 1 percent. As community vacancy rates increase, it becomes difficult or more expensive for developers to obtain construction financing. In such cases, it is better to position Service members to use existing housing units rather than to sponsor new construction. Positioning can be accomplished by leasing housing units directly, by using commercial property managers to locate additional units, by increasing local HRO penetration of the rental market, or by providing Service members with higher allowances.

APPENDIX B

POSITION THE SERVICE MEMBER AS A TENANT

Vacant (or soon to be vacant) housing units exist in every community in our case study. The units are usually not occupied by military families for one of these three basic reasons: they are unacceptable, unaffordable, or unavailable. In Appendix C, we address the solutions to the acceptability problem. In this appendix, we deal with alternatives to solve the problems of availability and affordability; the solutions involve more effective positioning of military families as potential tenants.

INCREASE AVAILABILITY

Some residences in a community are not on the HRO list, and many of those homes are affordable to Service members under current allowances. Residential buildings may not be listed for one or more of the following reasons:

- HROs are not staffed in enough strength to cover the market completely
- DoD cannot lease single projects
- Units are owned by investors not focused on the military
- Project managers do not consider the military market
- Out-of-town owners cannot be contacted by the HRO
- Residences are managed by agents not listed by the HRO
- Agents do not share listings with HROs
- Residences are sanctioned for past practices
- Residence owners are reluctant to rent to military personnel
- Neighborhoods have poor reputations.

Until recently, DoD has allowed its housing needs to be filled only with newly constructed units. The advantage of using pre-existing structures is that rent for such buildings is generally based on coverage of an older mortgage and is lower than amortizing the cost of new construction. Frequently, large projects are owned by investors and managed under detailed guidelines in which the military renter is not

considered. The growing proportion of projects and developments in the residential market in urban areas makes it a critical market segment.

Increase HRO Coverage

Service member rentals of individual units are generally guided by the installation HRO. HROs do a good job with limited resources; however, they do not have comprehensive listings of every residential unit in the region. Increasing their coverage should be a high-priority action. We recommend that HROs be funded to undertake a maximum effort to achieve full market coverage. This marketing challenge is an extremely low-cost solution to the Service family housing problem. Resources directed at making HROs more effective are well spent; the life-cycle cost of an HRO employee is completely covered by finding 10 to 14 new housing units that would otherwise have to be constructed.

The Army's test in Oahu, HI, of the Housing Operation Management System (HOMES) automated data base is a step in the right direction. The final product should be expanded to include a complete inventory of every residential unit in an HRO's area of coverage. We noted that neighboring installations were often unable to share automated data because of total incompatibility of hardware; this needs to be solved.

Where installations exist within 30 miles of each other, they often have agreements on which HRO covers the area. While those agreements are better than time wasted on redundant coverage, efficiencies are generated only if the information on the common territory is shared. In practice, the units in a shared area are seldom used by military families of the noncovering base because the families deal only with one HRO. An HRO at Andrews AFB, MD, for example, could be unaware of an empty unit near Fort Belvoir, VA, less than 15 miles away. Implementation of a Tri-Service HOMES access network on a regional basis with a comprehensive data base would solve the information-sharing problem; however, complete implementation of the system and installation of a communications network will not be possible for several years. In the absence of a common data network, in the many cases where installations cluster together, a DoD or regional HRO should be established to serve all local Service members, as was done in Hawaii.

To improve the effectiveness of the HRO system, the local offices' coverage of the market must be increased. To accomplish this, action will be required at OSD level to ensure the necessary common direction among all Services. We recommend that the DASD(I) develop policies to:

- Support sufficient HRO funding to ensure full local market coverage
- Encourage the automation of HRO listings as a first step to a common data base capability
- Direct the establishment of regional HROs in areas with two or more installations
- Adjust the development of automated HRO listing networks to ensure implementation in areas with two or more installations.

Investigate Real Estate Management Contracts

How Real Estate Management Contracts Work

For reasons listed earlier, HROs may not be able to find or list a number of the units available in the market. Commercial managers with profit motives might be able to find those units or even take them from property currently under their management. The Government would pay the property manager to maintain a prescribed number of units available for military rentals and would probably guarantee that the units would be leased. These leases would have to fall within a prescribed cost limitation.

The benefits to the managers arise from the elimination of vacancies, a ready pool of renters obtained with no overhead, and a guaranteed rent escalation (unlike many private-owner leases). Those benefits can be passed on in the form of leases with controlled increases rather than having to depend on the market rate.

This alternative involves the cost to rent the unit from the property owner, a fee to the real estate manager, and some Government contract administration cost. The objective is to get into the market at today's prices. If the Government can rent at today's rate plus 4 percent maintenance rent increases and a flat 10 percent fee, then DoD begins to pay below the market during the third year of the contract even if rents are to escalate at 7 percent annually.

Challenges and Opportunities

Problems can be expected in trying to develop the terms of the lease. Most likely, the units will be scattered. If the Government pays the lease, the units must be assignable even if they are not particularly convenient to the base. If military families pay the lease, then the units cannot be assignable, and yet the lease must be guaranteed by the Government. The Government contract manager must ensure that all units paid for are really new to the military market.

Our research indicates that real estate firms may be interested in such a program. However, without indications of Government commitment to the idea, those firms are generally unwilling to commit significant time to consideration of the details of the process. Government housing officials are also interested in the idea; hiring freezes are increasing the workload on their staffs and they see a chance to shift some of the very manpower-intensive work of finding listings to the private sector.

Effectiveness

We cannot assess the effectiveness of this alternative without substantive discussions with industry representatives. That will require industry forums in different regions to pursue the feasibility of real estate management contracting and, if possible, to determine a framework acceptable to both the Government and real estate firms.

INCREASE AFFORDABILITY

In high-cost areas, emphasis on locating affordable units or upgrading unacceptable units will only solve a portion of the DoD housing deficit. Aside from sponsoring new construction, the only other way to open more housing units to Service families is to increase their market power.

That power is diluted at present by the limited income, the general dispersion throughout the community, and the uncertain duration of residence of military families. DoD and many communities agree that policies leading to concentrations of military-only areas are undesirable. Assistance should be focused on reducing the landlord's perception of turnover problems or increasing the family income.

Lease Existing Units

How Leasing Works

The cost to the Government to build or lease a project is the cost to build, operate, and maintain that project. In the case of a pre-existing building, the capital portion of the cost reflects old debt service, which remains constant. Although long-term leases have to be renewed at market rates, they still lower the total cost (see Figure B-1). The long-term lease also keeps DoD as the lessee, thereby eliminating the problem of turnover and allowing the units to be assignable. Having no capital investment, DoD has the option to simply not renew the lease at the end of any lease period.

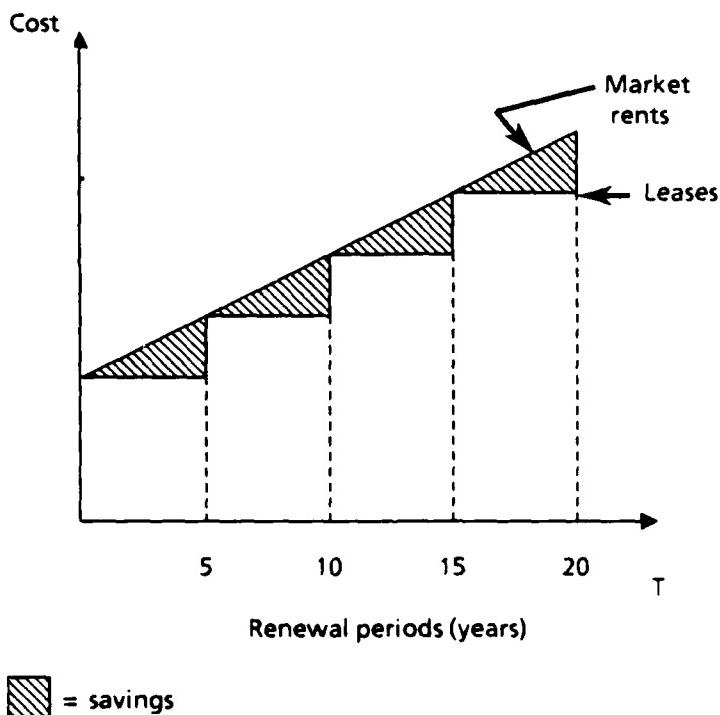


FIG. B-1. THE ADVANTAGE OF MULTYEAR LEASING

Our cost model includes escalating maintenance costs, a fixed equity or capital cost, and a proportionate risk/opportunity cost. We modeled four consecutive 10-year leases, in which the rent rises to the new market rate at each renewal. The fair

return to the contractor is concurred with, in principle, by three major property managers.

Our basis for estimating market rent was for commercial, conventional apartments. That approach best represents the probable source of the units and the leverage of negotiating as a large tenant rather than a collection of random individuals. The result is a slightly lower price than advertised rents.

Challenges and Opportunities

The general belief that the owner's risk diminishes significantly by taking a long-term lease with the Government is not substantiated by real estate managers. Detailed financial qualification before leasing to private sources reduces the risk of nonpayment to a small amount. Sizable deposits, regular collection against ongoing damages, and checking references have reduced the risk of damage repair to approximately 2 percent. The potential of a below-market lease to reduce a maximum 4 percent risk while locking the owner out of his equity over a long term did not excite these managers; they felt that a market rent was the only solution.

A leasing program has its greatest effectiveness in markets that have large vacancy rates. In an extreme case, rents may be reduced to the point at which Service members can afford them; however, most communities we visited had vacancy rates of 5 to 7 percent without any significant effect on rental prices. Vacancy rates make owners interested in long-term leases at current rates but do not appear to encourage discounting.

This leasing alternative offers a current market rental unconstrained by Service member allowances, with CPI increases. Those provisions make it a much stronger alternative than leases under Section 802, which are detailed in Appendix D.

Effectiveness

This alternative provides the Government with an escape from escalating housing costs for an extended period. Leasing costs much the same as rehabilitation. It is one of the more inexpensive alternatives under all conditions and is less expensive in the long term than the current system of allowances. Leasing is also a rapid solution, because the necessary buildings already exist.

Recommendation

DoD should seek authorization to lease existing housing units. Leasing is very cost-effective and should be used wherever possible.

Increase Allowances

How Increasing Allowances Works

The obvious way to increase the affordability of housing is to increase allowances. The most commonly proposed method for doing so is to allow the market to set a rental rate and the installation to determine a ceiling of acceptable rental costs. Military personnel would enter the market as individuals. In the current VHA system, Service members are paid a flat rate VHA established for their grade. We suggest that they apply for direct reimbursement of documented housing costs (including utilities). The allowance reimbursements would then be issued up to the ceiling.

Challenges

This alternative has four major problems. The first is that after a certain time, usually 18-21 years, it becomes the most expensive of all alternatives. (See Figure B-2.) Although the initial cost of paying allowances is less than that of DoD's amortized capital investments, eventually the debt service burden is removed from the owner's cost. Renters, however (i.e., those receiving allowances), do not receive rent reductions at that point. Figure B-3 shows DoD's transition to paying only operation and maintenance (O&M) costs while the renter continues on a path of ever-increasing rent.

The second problem is that increasing allowances does not necessarily accomplish the goal of placing Service members in suitable housing. Some Service members will take any money given and live in the cheapest place they can find when a flat-rate VHA is paid, as is the case today. Third, with a voucher or reimbursement system, programs are subject to great abuse. Such a program, Rent-Plus, has been plagued with collusion between the landlord and the Service members to extract the ceiling payment from DoD even though reasonable rents were considerably lower.

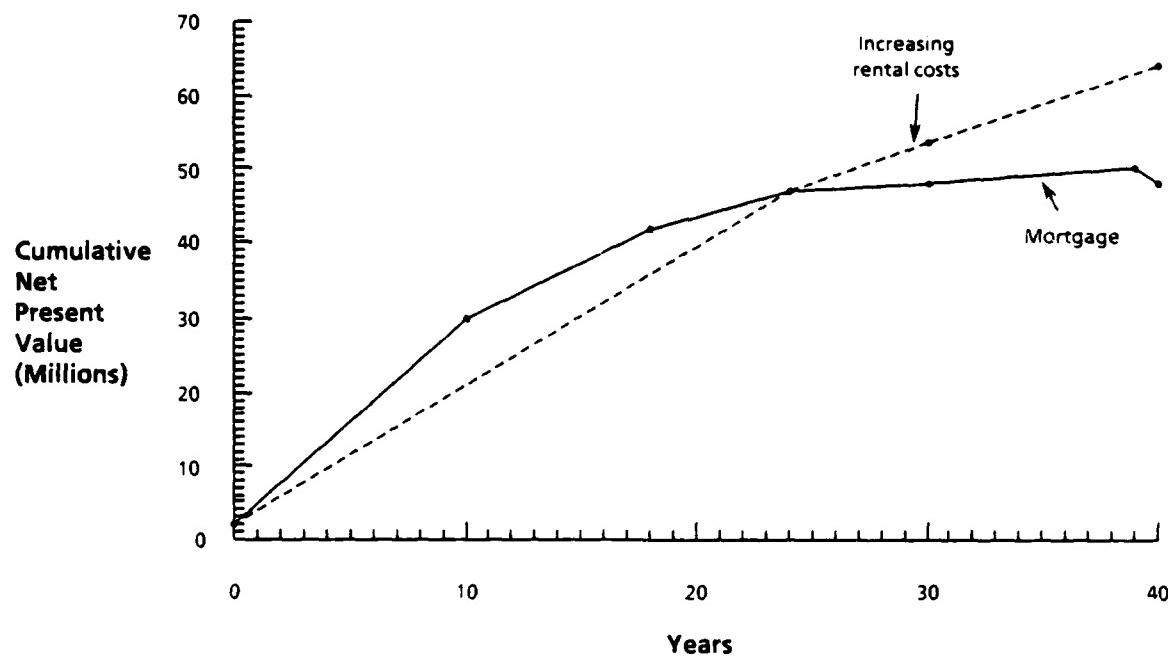


FIG. B-2. CUMULATIVE COST OF MORTAGING VS. RENTING
WASHINGTON, DC

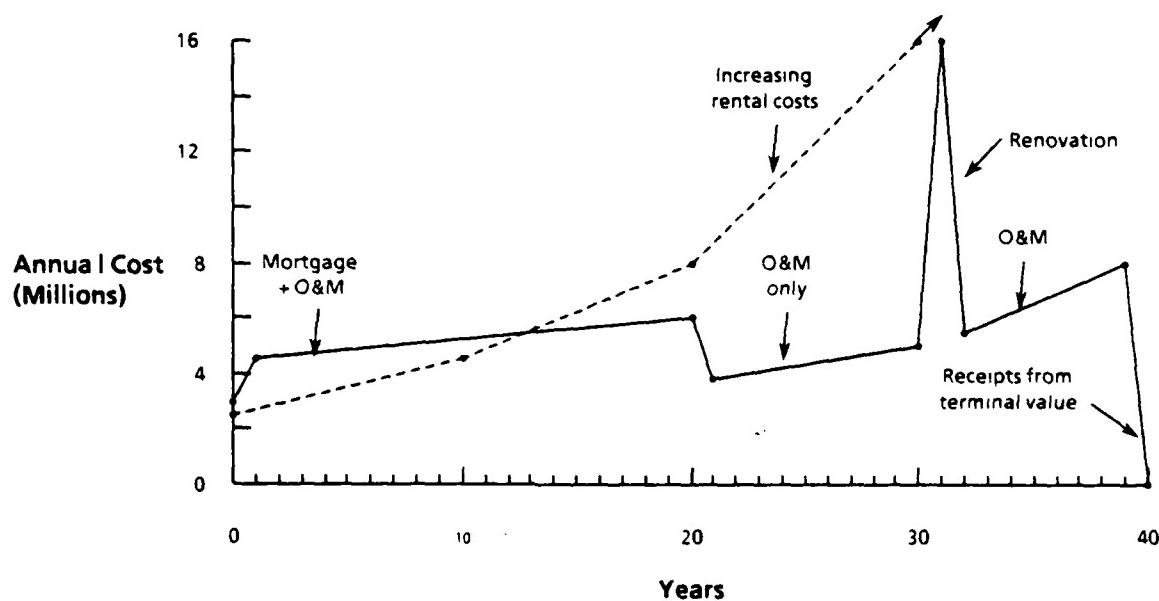


FIG. B-3. YEARLY COST OF MORTAGING VS. RENTING
WASHINGTON, DC

Finally, housing allowances are paid to all eligible (i.e., off-base) families as an entitlement. Increasing allowances incurs costs that must be paid not only for the Service families in unsuitable housing, but for all the off-base families. The figures we have provided in Table 2 (on page 9) are for 300 families; in fact, allowances would be paid to thousands of families whether they needed the increase or not. That vastly increases the cost.

To be effective, the allowance must recognize the complete market cost of living. To provide the most conservative cost estimate, our cost model ignores utility costs, and sets out-of-pocket costs at the current 20 percent of the National Mean Housing Cost rather than the 15 percent originally intended by Congress. We allowed that mean to rise with the CPI. The mean cost of housing in the case study areas has been allowed to rise at historical rates.

This method is subject to the argument that the Year 2010 forecast rent (Year 23 of 40) would be more than \$3,000/month for Washington, DC, and more than \$10,000/month by 2027 (Year 40). Considering that rents in New York City are more than \$1,000 today for what a non-New Yorker would view as a tenement and can be over \$3,000 for a reasonable apartment, we are not uncomfortable with the 2010 figure. The 2027 figure may seem absurd if taken out of context. We have used 40-year projections throughout to provide consistency among evaluations but caution against trying to use any figures from the latter years of such projections other than to provide perspective to relative calculations.

Effectiveness

Increasing allowances appears superficially to be a possibility at locations such as Fort Bragg, a stable community that has enough housing units to serve the installation. The rotation of Service members has, over time, created an artificial equity (to cover realtor fees) that now places many units at Fort Bragg just beyond the reach of many families. Current allowances will not amortize construction costs unless the developer has owned the land for some time, but significant jumps in cost are unlikely because the military is the dominant force in the area. The exponential cost curve of the "increase allowances" alternative is flattened in a low-inflation environment. Therefore, an increase to meet market costs seems to offer a long-term solution.

Unfortunately, the closed system at Fort Bragg is not a perfect market. In a high-cost metropolitan area, increasing VHA is expensive because it tries to catch up with a housing market that pays no attention to military pay structures. At Fort Bragg, however, the closed system allows an increase in allowances to be matched immediately by an increase in price. This happened routinely at a number of installations in the United States and overseas at which Rent-Plus was tried. Although the static-situation analysis suggests that Fort Bragg-style situations may have merit, a dynamic approach demonstrates the errors inherent in the static evaluation.

Recommendation

Increasing allowances requires no lump-sum capital investment. Over a shorter life-cycle analysis, it seems to be relatively inexpensive. Nevertheless, we do not recommend it.

In the short-term, this alternative offers the only immediate solution to the Service member family's housing crisis. The ease of applying this temporary remedy should not be allowed to obscure its eventual ineffectiveness. DoD must rely on increases in the VHA to assist the Service member in finding housing today while fighting vigorously over the long-run to eliminate VHA as the major support of family housing needs.

APPENDIX C

FIX UNACCEPTABLE UNITS

In addition to building new housing units, another source of Service member family housing is rehabilitated facilities. On-base and off-base housing units may be upgraded by repairing them to meet DoD standards, or they may be remodeled through a major construction process to reconfigure them into, for example, multi-family units instead of single-family units, or residential units instead of commercial units. Table C-1 points out that housing units may be created from nonresidential buildings such as offices or retail store buildings.

TABLE C-1
BUILDINGS THAT COULD BE FIXED

Location	Building	Activity	Remarks
On base	Residential	Repair	Does not count
On base	Residential	Remodel	
On base	Commercial	Remodel	Alternative use?
Off base	Residential	Repair	
Off base	Residential	Remodel	
Off base	Commercial	Remodel	

On-base repairs to return units to DoD standards do not increase the supply of housing because, in many cases, those substandard units are currently occupied. Remodeling of on-base units to create multifamily units out of residential or commercial units increases the supply, and we address that as an alternative. Our model examines the remodeling of residential units, but the use of excess office space or similar structures would engender the same results. Remodeling of on-base commercial buildings assumes that no existing activity has to be relocated; if relocation is required, the cost to move should be included in evaluating a remodeling project. Off base, the activities are essentially similar because in each case, newly

acceptable units are created. To avoid confusion, we will arbitrarily call the on-base process "remodeling" and the off-base process "rehabilitation" even though the production of units off-base may involve either repair or remodeling or both.

It seems reasonable that building part of a structure must be cheaper than building the whole thing. The alternatives we present, less expensive in every scenario than any construction alternative, demonstrate that reality. We recommend that on-base remodeling be implemented immediately to the maximum possible extent. Off-base rehabilitation should be undertaken as soon as possible; however, the complexity of programs dealing with a large number of civilian property owners would require the development of test projects for the selected communities until a successful solution is demonstrated.

REMODEL ON-BASE QUARTERS

How Remodeling Works

At less than 15 units per rate, the suburban appearance of many installations is anachronistic in high-cost urban areas. We cannot place a value on the enhancement to the quality of life this low-density housing provides; however, without unduly affecting aesthetics, it can be used to help solve the deficit through remodeling. New units can be created by making multiplex cluster homes where duplexes and single-family residences exist today. By taking advantage of existing utility lines, exterior walls, driveways, etc., significant cost savings can be achieved as compared with stand-alone construction projects.

Many installations have oversized quarters. Although many such units are reserved for the installation commander and flag officers, there are a number of others. The DD Form 1377s (on which housing deficits are calculated) for the installations in our case studies show large unmet requirements for two-bedroom units, reasonable demand for three-bedroom units, but little need for the numerous four-plus-bedroom units. These excess units could be remodeled to multifamily units, allowing several families to live on base where one family lives today.

Challenges and Opportunities

Because the junior-grade personnel are most affected by the inability to afford off-base housing, on-base solutions tend to assume the redirection of housing assets toward those junior personnel. Installation commanders are concerned that over-

emphasis on junior-grade housing with the result that the senior personnel are forced off-base, would have an adverse effect on the morale of senior personnel who have "paid their dues." Our alternative does not require the eviction of senior personnel but rather increases the housing supply without moving any current residents off base.

Without a complete study of an installation's mission, activities, and inventory of buildings, we cannot model the option of using nonresidential buildings to create housing. However, that option should be considered by installations when evaluating the potential for remodeling.

Effectiveness

Moving more personnel on base requires the Government to pay housing O&M costs but relieves it of the burden of much higher housing allowance costs. The scope of this alternative is limited by the exact housing inventory and personnel demographics on each installation.

Recommendation

Each installation should review its capacity to support this alternative, and it should be implemented wherever possible.

REHABILITATE OFF-BASE BUILDINGS

How Rehabilitation Works

Rehabilitation takes unacceptable units and converts them to acceptability.

A pilot rehabilitation project has been started in Alameda, CA, a middle-class city that simply ran out of land for growth and did not wish to lose its residential neighborhood atmosphere. Single-family residences were permitted to be remodeled and improved to generate additional apartments without affecting the general character of the buildings. To the limited extent that funds were available, the city made loans to homeowners who, in return, were to allow low-income people to rent the new units. The program was a success, showing a positive return through the loan repayments. In Oakland, CA, Service members were permitted to occupy rehabilitated public housing; their allowances recouped the cost of rehabilitation for those units and a substantial number of others.

Our cost model is based on the Alameda experience. Three hundred units are generated at the rate of 30 a year, using loans provided directly to the unit owner by the Government. The units are set aside to rent to military families until the loan is paid. Another mechanism, loan guarantees, requires little capital but would not generate a return. The point of the program is that it generates acceptable, available units at a lower net cost to DoD than building its own units.

Challenges and Opportunities

Installation commanders have been wary of any efforts to place military families in public housing. Public housing that is in need of renovation implies the worst of situations. Commanders are right to be cautious; however, a great deal of public housing is not in urban slum areas. Where the housing is in a safe, clean neighborhood in which only some of the residents need to have rents subsidized, the inclusion of military families can be seen as a healthy addition to the community. That was essentially the case in Oakland, where the city could not afford the minor rehabilitation effort (mainly paint, wallpaper, and new appliances) necessary to meet DoD standards without DoD's participation.

Alameda's approach emphasized the conversion of single-family houses into multifamily houses, a very useful method in dense urban areas or in zero-growth areas. That approach addressed a market need; generally, lenders may provide funds to upgrade existing multifamily houses but not single-family houses. The program emphasized decent neighborhoods instead of urban slums.

Another excellent source for rehabilitation is in former commercial areas. Where commercial activities have migrated, towns may be left with sound but uninhabited core areas. Provision for inhabitants tends to lead to a rapid reestablishment of service businesses. A tax windfall may be created for the city, which may provide major concessions to support such projects.

Effectiveness

Rehabilitation is one of the least costly alternatives. It avoids the massive capital cost of new construction and requires no land purchase and little site work or infrastructure. Like the public housing alternative, the depth of this program is limited; total units might be limited to 200 to 400 per installation.

Recommendation

We recommend that DASD(I) pursue pilot programs for rehabilitating off-base buildings for Service member housing. This alternative increases the number of acceptable units even in zero-growth communities, builds excellent community relations in helping to revitalize stagnating neighborhoods, and provides the possibility of a real return on any capital investment.

APPENDIX D

BUILD NEW UNITS

This chapter considers the range of alternatives for building new units and reviews as a group those alternatives that have already been attempted. We discuss each alternative in turn, describing how it works, difficulties that may be expected, and its relative effectiveness; we then offer a recommendation on the use of the alternative.

The existing building alternatives include MILCON, the Section 801 build-to-lease program, the Section 802 rental guarantee program, and the Section 2667 land lease program.¹ New alternatives are cooperative housing projects and joint ventures (with local governments) to produce public housing.

Finally, we review some generic cost-reduction initiatives that private-sector organizations have proposed to DoD — large financial contracts, new construction techniques, use of nonprofit agencies, and selling off all DoD housing.

POSSIBLE CONSTRUCTION ALTERNATIVES

Building new housing units requires more than just capital funding. The fundamental elements of capital projects are construction, maintenance, and final ownership (see Table D-1). Our alternatives were developed by varying the parties that provide the initial capital funding, that are responsible for maintenance of the property, and that take final title to the property. In Table D-1, "Government" usually means DoD but may include other Federal or local agencies. "Private" includes commercial banks, developers, nonprofit agencies, private citizens, or Service members, except as noted in the last alternative.

¹Section 801 of the Military Construction Act authorizes housing to be built and financed by a contractor and leased to the Government; Section 802 of the Act authorizes housing to be built and financed by a contractor and leased to individual Service members, with the Government guaranteeing a 97 percent occupancy rate; Section 2667 of Title 10, U.S. Code, authorizes the Government to lease land for up to 50 years for purposes of advancing national security, e.g., to build and operate housing projects.

TABLE D-1
POSSIBLE CONSTRUCTION ALTERNATIVES

Possible alternative	Capital	Maintenance	End owner
1. MILCON/Joint Venture	Government	Government	Government
2. MILCON	Government	Government	Private
3. MILCON	Government	Private	Government
4. Reverse lease	Government	Private	Private
5. Mortgage/lease-purchase	Private	Government	Government
6. Section 801	Private	Government	Private
7. Nonapplicable	Private	Private	Government
8. Sections 801, 802, 2667	Private	Private	Private
9. Cooperative housing	Private	Service member	Service member

The three MILCON possibilities (1 – 3) are all basically the same; the decision to contract out for the maintenance or to sell the property in the outyears is not relevant to the cost of the option. These decisions can be – and are – made for current MILCON projects.

Currently, the Government has no mechanism for a reverse-lease (Possibility 4) in which the Government provides the capital for a facility and allows a private owner to lease-purchase it. Initial analysis indicates that if contractors could make a profit by leasing units, they would do so without having to pay the Government a middleman fee. This alternative would be excellent if military members were permitted to buy the units, but would probably face enormous political resistance from private property owners and real estate interests because of the very large profits and commissions that they would have to forgo. Thus, we did not consider Possibility 4 to be viable.

DoD is not allowed to purchase capital items through mortgages. We have modeled Possibility 5, a lease purchase variant of the Section 801 program, to illustrate the potential value of a mortgage. The current clauses in Sections 802 and 2667 RFPs in which the contractor is required to abandon the property at the end of the lease, do provide mortgage-like qualities to those programs.

Privately owned buildings are currently leased to the Government under the authority of Section 801 (Possibility 6). We see no method in which a private party will voluntarily cede title to property to the Government (Possibility 7) unless the Government buys the property outright, in which case the MILCON examples would be more appropriate.

The private marketplace provides the means by which property may be leased to the Government or to military families (Possibility 8). Included within normal market transactions are private rentals, and the current DoD programs using Sections 801, 802, and 2667.

Finally, groups of Service families may become formal participants in the development of housing projects through cooperative housing ventures (Possibility 9).

Eliminating the repetitious or infeasible possible alternatives from the list above, we are left with MILCON; Sections 801, 802, and 2667; lease-purchasing; joint ventures; and cooperative housing. Each of those alternatives is analyzed in detail in this Appendix. However, DoD already has some experience with many of those ideas. That background provides valuable insight into some of the potential shortcomings of new initiatives.

EXPERIENCE WITH CONSTRUCTION ALTERNATIVES

Until the all-volunteer forces brought an enormous increase in military families, DoD's preferred method of addressing housing shortfalls was to build MILCON housing on base. A shortage of MILCON funds in the 1950s and 1960s was addressed through commercial development of on-base housing, which was later purchased by DoD when funds became available.

These early DoD alternative housing programs were referred to as Wherry and Capehart after the U.S. Senators who introduced the enacting legislation. Those programs demonstrated many of the features and problems of current initiatives. Wherry housing provided a guaranteed lease to commercial developers who built housing to rent to DoD. The Section 801 program has its roots in that program. The installation could not build its own units until all the local Wherry units were purchased; the owner, assured of eventual sale, tended to build poorly and performed only the maintenance that was unavoidable.

Capehart housing involved a DoD direct mortgage. Units were designed by DoD and built on Government land by developers who first bought the land at a nominal price. The units were then purchased as the Government took over the developers' construction mortgage. The demise of Capehart housing and the subsequent prohibition on DoD mortgaging were occasioned not by a failure of the program but by a failure to monitor contract performance.

Continuing pressure to reduce the MILCON budget led to build-to-lease pilot projects under Sections 801 and 802. The initial failure of those programs to generate enthusiasm within the private sector — particularly among financial institutions — resulted in continuing modifications and in the use of Section 2667 land leases as a vehicle for very loosely structured projects. In general, Section 801 projects (after many refinements) have been successful while Section 802 projects have failed; Section 2667 projects are still in the early phases.

The development of each of these programs is explained subsequently in this chapter. Details of the specific contract changes that led to the success or failure of any particular project is beyond the scope of this study. However, the summary in Appendix E shows that military housing contracts, on or off base, must meet a wide range of civilian and military criteria beyond simple convenience of the Government.

The Section 801 program has been successful because annual leases are based on engineering estimates. It is vital to recognize that the cost of executing a given construction project remains the same regardless of how it is paid for. Contractors depend on an acceptable manner and amount of payment.

The 802 and 2667 programs, by contrast, tie the contractor's reimbursement to personnel allowances. That limits the application of the programs to those areas in which allowances can offset the costs of construction. The success of both programs depends on a flexible approach to contracting.

A rigid, standard RFP is unlikely to be successful. Almost all projects that are now success stories, under Section 801 and Section 2667, were close to failure at some point; adjustment on the part of the installations, the communities, the bidders, and financial institutions made success possible. Serious market research and selling programs at many installations, combined with a partnership approach

to contract administration, account for the steady improvement in success rate visible today.

One of the causes of early problems was the initial economic analysis. All projects were "economically feasible" from the Government's point of view because the proposed schedule of payments was less expensive than equivalent MILCON projects. Those payments, however, did not meet the contractor's economic criteria and drew few proposals; when awarded, the contracts were not completed. The recent use of bid bonds may recoup some loss to the Treasury but does not move Service members out of unsatisfactory housing. In our approach, we emphasized an estimate of the true cost of providing a service and, from that, derived the expected cost to the Government.

Recent projects have come under Office of Management and Budget (OMB), DoD, and Congressional scrutiny to see whether the Government received full value. In general, excessive costs result from rushing projects into existence and ignoring reasonable objections; improper economic analysis can lead to grossly inflated lease caps; and inadequate inspection of construction projects allows sloppy workmanship to go undetected. As a result, housing projects become overpriced, and yet the contractor is completely within the requirements of the RFP.

The work of all the contractors we interviewed met or exceeded the RFP requirements. Unlike weapon systems procurements, in which DoD has subject area expertise equal to that of the contractors, builders have far more experience and far more at stake personally than DoD housing or real estate representatives. If the initial economic analysis is performed conscientiously, DoD will derive a reasonable market price for the desired project. If the on-site inspection is done competently, building and maintenance will meet the required standard. If the contractor is subsequently able to generate internal efficiencies resulting in a profit margin higher than DoD intended, the Government should not view the extra profit as a problem; rather, DoD should take advantage of demonstrations of cost-saving techniques by requiring their use in future projects.

In some cases, DoD has been unwilling to admit failure of a project. Pilot programs, which are designed to accept high risks by limiting exposure, should not be terminated because of one failure. Denying failure eliminates the opportunity to make improvements. Programs should not undergo radical restructuring just

because the contractor finds a way to shave costs; that experience should simply be built into the data base of reasonable costs.

Our model for determining life-cycle costs is described in some detail in Appendix F. A recent change to the Section 802 process allowing existing units to be offered for lease has not been tested; it requires a rental analysis, similar to our "Lease Existing Units" alternative presented in Appendix B. The construction and operation process for all the other existing alternatives is similar enough to permit the use of the same model.

MILITARY CONSTRUCTION

How MILCON Works

MILCON is the traditional DoD means for constructing new housing. It is distinguished from all other alternatives in that a project is paid for in cash at the outset, and therefore is free of a heavy debt-service burden. To finance MILCON housing, DoD obtains an appropriation from Congress after identifying the number of units to be built, their location, and a cost ceiling based on DoD-wide standard construction costs. DoD may use MILCON funds to purchase existing units to meet the requirement; if such purchase is not possible, a competitive construction contract is awarded. Once delivered, the housing is owned by DoD, which provides all maintenance and utility services. That housing is then provided to Service personnel in exchange for the forfeiture of housing allowances. If MILCON housing is available, the Service families are required to live in it.

MILCON provides the installation with a totally owned asset, with no vacancies beyond normal turnover (assuming a constant base population). It is usually near the workplace, thereby reducing travel time and transportation costs, and it is close to military-provided personal support services. It is also under military legal jurisdiction, allowing the installation commander far greater control and avoiding the publicity that might occur off base over routine domestic incidents, child problems, rent defaults, and so on. The appeal of this program to the field organizations, which are not required to fund it, is obvious.

Challenges and Opportunities

MILCON housing represents a major expense. The need for initial appropriations may require that a project not be supported if it threatens other higher-priority

projects, systems, or personnel funding. For installations whose immediate needs are severe but not of the highest priority, MILCON is unlikely to be available.

MILCON has economic risks. One example shows both sides of the MILCON economic risk at once. In Newport, RI, Navy presence was reduced in the late 1970s. As the major employer in Newport, the Navy found itself with essentially worthless property on its hands and disposed of much of it. In 1987, the Navy decided to return to Newport. In the meantime, the city had developed a vibrant economy and was additionally viewed as a bedroom community for Boston. Real estate prices had increased significantly, and the Navy had to pay market rates, both to its Service members in allowances and for land and capital improvements to replace the assets sold earlier.

MILCON has some other risks. The Navy's MILCON project at the former Hamilton Air Force Base (AFB) in Marin County, CA, has been blocked by a series of objections; the battle is currently on environmental grounds. For another MILCON project in Staten Island, NY, the RFP elicited no responses because, in part, of a perception by builders that local government regulation overshadowed the limited return the Government could offer. On-base construction may be prevented because it can undercut the rental market or hold down private construction. Large clusters of military-only housing become symbols of an unwanted military presence in some areas. These are risks in that they may occur at any time during the course of contract award and construction, delaying or halting programs at considerable expense to DoD

On occasion, the ability of DoD to pay in cash can result in inexpensive purchases of housing units. If funds are available when a local developer has a group of housing units for sale, the construction RFP can be amended to include the purchase of existing units conforming to the original standard. The ability to close such a deal with a minimum of financial complication and the distressed circumstances of the developer often result in very favorable terms for the Government. The Government has twice been able to take advantage of such conditions in San Diego. Similar opportunities elsewhere have been missed because funding was not in place at the critical moment.

Relative Effectiveness

MILCON is the least expensive of the construction alternatives because it involves no financing costs and no land costs. Cash payment eliminates a tremendous cost of debt service. The rationale for excluding the very significant cost of land is that on-base land can be used for housing or not at all; land that is not for sale has no market value. Because of these two attributes, the more expensive the project would be in the civilian market, the greater the savings attributable to MILCON. O&M functions are performed by the installation housing and engineering offices; in the cases we studied, the difference in cost between military and commercial O&M was accounted for by levels of service. We cannot measure the cost of necessary work neither budgeted for nor undertaken.

Several expense elements are clearly not required in the MILCON alternative. However, the installation itself performs many functions that would be paid for through taxes and similar payments if they were performed off base. In our research, we ensured that on-base costs included a share of all base activities that provided such services.

MILCON has its greatest advantages in communities in which land and construction costs are high, increasing the amount that private contractors would have to finance. Not having to pay for land gives MILCON an advantage only over those projects that are built off base; however, like all on-base projects, it requires a very substantial School Impact Aid payment. As a military-owned project, it entails greater military contract management costs than are required when the project remains the property of the builder. The project has significant terminal values.

Recommendation

We recommend that when non-construction alternatives have been exhausted and construction funds are available, MILCON be used, particularly in high-cost areas. The drawback with MILCON is the limited capital available; when MILCON funds are limited, the Government must use other alternatives.

SECTION 801 BUILD-TO-LEASE HOUSING

Section 801 of the Military Construction Act of 1984 authorizes housing to be financed, built, and operated by private contractors, and leased by the Government to make it more attractive commercially.

How Section 801 Works

Since its enactment, this program has undergone many modifications. Essentially, contractors finance, design, and build housing and lease it to the Military Departments in entirety for 20 years. The long term of the lease provides the guaranteed return allowing the project to be financed. Reflecting the Congress' desire to sponsor a greater supply of housing for the community rather than specifically for the military, the lease may not be renewed, although DoD may purchase the project at then-prevailing market rates at the end of the lease. The housing is assignable; when it is available, military families must live in it.

The cost of providing such housing is restricted to 95 percent of the MILCON cost for equivalent projects, excluding land value. Technically, Congress might elect not to fund lease payments in any given year; this concern has been alleviated by a DoD Counsel ruling that the leases may be paid from nonspecified O&M funds if MILCON lease payments are not appropriated. However, the lingering perception of potential risk is reflected in high financing costs and the transfer of significant equity rights to the lender.

Challenges and Opportunities

Section 801 projects are still not entirely trouble-free. Lenders, contractors, and the Government are continuing to struggle to reduce their risks, often at the expense of the other parties. That struggle is a dynamic process inherent to any commercial venture and should be viewed with caution but not with alarm.

Lender risk has been reduced by identifying a shelter rent and a maintenance rent. Shelter rent, composed of fixed costs (mostly debt service) cannot be withheld by the Government. Maintenance rent is adjusted with Consumer Price Index (CPI) increases and can be withheld to ensure performance. The Government has made itself more secure with an array of forfeitable bonds. In high-cost areas, the cost of those bonds, added to the high price of land options, investment cost, and opportunity

cost of building for the military, causes resistance to bidding on the Section 801 program.

An environment of significant short-term shifts in interest rates has placed financial strains on several Section 801 contracts because changing interest rates can make a project infeasible under the proposed rent ceiling. A recent suggestion has been made to include a mandatory Best-and-Final Offer (BAFO) phase to the contract evaluation process. That feature would be effective in allowing adjustment of the shelter rent to reflect current financing rates. A single BAFO should be sufficient; after the award, subsequent adjustments for interest rate changes would be open to the standard negotiation process. We recommend that a BAFO provision be incorporated into Section 801 RFPs immediately.

Section 801 housing suffers from a major logical flaw. OMB has ruled that DoD may not take or imply ownership of the project without either appropriating all the money in the first year, or paying full market value at the end of the lease. If all the funds must be appropriated in the first year, there is no point in allowing the contractor to take out a mortgage: DoD would pay cash. Otherwise, the contractor would take the money and pocket the "interest charges" as profit. If DoD pays the capital cost in cash, the project is not a Section 801 lease but is a MILCON turnkey project. Appropriations in the first year, therefore, are impossible by definition, even if the budget had room for them.

Paying fair market value at the end of the lease is equally absurd. To obtain financial backing, the contractor charges the Government with the full debt load on the property; yet, to obtain title, the Government has to pay full market value again after the lease expires. That requirement is particularly inappropriate for Section 801 projects built on base or for net leases in which developers have no interest in the terminal disposition of the property.² No "hidden" acquisition costs are incurred; the lease terms are already established and ownership is simply a cost-free consequence of those payments. This argument is reflected in our identification of two Section 801 on-base alternatives, one featuring a lease-purchase provision, the other being a conventional Section 801 on-base project without ownership.

²Gross leases are those in which the property owner pays all costs including utilities. Net leases relieve the owner of tax increases, utilities, and maintenance, in that order; thus, a triple-net lease passes almost all costs except capital to the renter; a double-net lease requires the owner to perform routine maintenance.

Recent DoD initiatives, such as providing land options and Government-furnished maintenance, continue to reduce the Government risk. Mandatory land options attempt to reduce the speculative value of land created by several developers bidding on the same lots. Options can also reduce the post-award delays caused by unexpected zoning or environmental challenges. We support the use of land options, but urge that RFPs continue to allow the contractor to propose the use of other land. Failing to do so shuts out a large and potentially fruitful source of generally high-quality bidders. Many nonprofit organizations, such as churches and colleges, have a need for good-quality facilities in the outyears but cannot afford to build without selling the very land on which the project would sit; their proprietary interest in ultimate ownership of the building would help make them an effective ally to the Government's interest in quality construction and maintenance.

The most controversial initiative so far has been the removal of maintenance responsibility from the project developer. The effectiveness of a gross lease depends upon the developer's ultimate interest in the residual value and an adequate cash flow throughout. If those incentives are removed, the developer will milk the project until the cash flow no longer meets acceptable rates of return and then withdraw. If maintenance and utilities are excluded, as in a triple-net lease, the incentive for the developer is to maximize the construction profit (building fast and cheap) while the incentive for the maintainer is to minimize costs not passed through, blaming as much maintenance as possible on nonconforming construction.

Under such circumstances, DoD must exercise increased control over the construction phase; that control will increase costs as the project takes on more of the characteristics of a turnkey MILCON project. However, in areas where the developer's interest in the residual value is limited by risks of base closings or by commercial risks such as remoteness, DoD will find it to be worth the extra expense to specify precisely what is to be built and exercise strong supervision of the process. In areas where residual value is a reasonable expectation, DoD may wish to assume some of the risk of allowing the developer a freer hand in order to reduce DoD's cost. That will occur mainly in high-cost areas where the real estate has an intrinsic value.

Relative Effectiveness

A Section 801 off-base project, surprisingly, can be competitive with an on-base project. Over time, the effects of School Impact Aid and depreciation, which represent savings off base, can outweigh the land cost, city fees, and lost terminal value of off-base projects. Clearly, if the Government is permitted to take final ownership, projects will be even more cost-effective.

On-base Section 801 projects, either with or without final ownership by the Government, resemble a MILCON arrangement paid for by bonding rather than cash; debt service expense forces Section 801 products to be more expensive. Because Section 801 funding is not restrictive and the process is now proven, DoD can expect that it will remain a major factor in providing housing in the future. However, DoD should also recognize that Section 801 is by no means the least expensive way of providing housing and should continue to seek other alternatives.

Recommendations

We recommend that the Military Departments retain Section 801 programs but implement the use of a BAFO phase in the source selection process immediately. In low-cost areas, we recommend the use of a triple-net lease; detailed DoD building specifications and quality control through on-site representation by the winner of the maintenance award will alleviate concerns over the lack of developer incentives for quality in a triple-net lease. Contractors will accept those provisions because they are interested in the cash flow and not the product. We recommend the use of a gross lease in high-cost areas in which the terminal value provides motivation to the developer to build and maintain high-quality structures in order to have a marketable property at the end of the lease.

SECTION 802 RENTAL GUARANTEE

How Section 802 Works

After the initial reluctance of the private sector to embrace the Section 801 opportunities, Congress took steps to commercialize housing projects even further. Section 802 of the Military Construction Act of 1985 authorized housing to be built and operated by a contractor and leased directly to Service members, with the Government guaranteeing a 97 percent occupancy rate. Section 802 programs reduce the need for a Government management force by permitting the rentals to be

transacted between the project owner and individual Service members. Expectations of terminal value were enhanced by reducing the lease term to 15 years. Viewing the transaction as a plain commercial project rather than a formal procurement, DoD expected savings to arise from such conditions as the use of community building codes rather than DoD specifications, and the use of prevailing wage rates rather than those imposed by the Davis-Bacon Act.³ In fact, these savings were not as great as expected and, in some cases, the Government began to develop traditional RFP documents.

To protect itself, the Government defined the guarantee level as requiring payment only of shelter rent – essentially, debt service – for empty units. At the same time, RFPs established rent ceilings at or near the existing housing allowance rates. Allowances that do not meet the rent on existing units with 30-year financing cannot offset the cost of new construction in 15 years. Although the contractor is allowed to rent units to the general public in the absence of Service family demand, the public is unlikely to desire the kind of units that could be built within the cost cap. Section 802 RFPs met with little response and no success (see Appendix F).

The initial provisions of Section 802 have since been modified to address those issues. In 1987, Congress extended the lease term to 25 years to reduce debt service levels, and authority was given to build the projects on base, thereby eliminating the land cost. Those ideas have not yet been tested.

The 1987 change allows the use of existing buildings as Section 802 vehicles. The difference between that initiative and our "Lease Existing Structures" alternative (detailed in Appendix B) is that the Section 802 payment is tied to allowances and the rental guarantee covers only the shelter rent. In our alternative, payments are based on market rates and the guarantee covers the full rent in a single-net lease (i.e., a lease that excludes utilities). The ideas are similar enough that we have not developed separate models. DoD is considering the idea of having the Government rather than the Service member pay for utilities; that idea would be equivalent to the arrangement for all on-base families but would increase the cost to the Government. We have not modeled that variation because it would require an adjustment of the total allowances paid to the Service member and the establishment of a control

³The Davis-Bacon Act, passed in 1931, requires construction companies under Government contracts to use wages determined by the Department of Labor if the contract is in excess of \$2,000.

method to identify excessive consumption. Those alternatives have not been offered in the RFP process to date.

Challenges and Opportunities

The owner of a building constructed for a Section 802 lease must deal with individual Service families, and that increases the overhead. The possibility of having to rent to civilians may require more amenities than are needed for a military-leased project. The extra risk requires a greater return.

As noted earlier, the basic costs of constructing and operating housing do not change simply because of a new financial vehicle. The effectiveness of Section 802 is that it holds Government costs to the housing allowances it would have had to pay anyway. For the project to be worthwhile to the builder, those allowances must cover costs and provide an acceptable return. Reducing costs to the Government, therefore, is possible only if a means of reducing the cost to the builder has been identified or another party to provide funds is introduced.

Relative Effectiveness

For construction programs, Section 802 provides a low-margin product. Off-base, it has potential only in low-cost areas; on-base, it has potential in high-allowance areas. It has failed where the even riskier Section 2667 housing has succeeded because of restrictive RFPs that view a Section 802 program as a different way of getting normal MILCON housing. This perception must be eliminated. Even in low-cost areas, Section 802 housing requires low-cost, rugged construction techniques, which may mean manufactured (prefabricated) housing or completely new methods. Dealing with new processes will call for great flexibility and insight on the part of the DoD contract managers.

Even with existing structures, Section 802 RFPs may not work. The natural application of this new initiative is in depressed areas in which buildings are available and a long-term guarantee at less than full rental value is acceptable. The probability that the installations in such an area have housing deficits is quite small. Thus, DoD is again faced with the inability to procure housing when it is inexpensive.

The Section 802 contract provides the Government with a relative advantage of \$100-\$300 per month per unit over the Section 801 project because the Service

member must pay all utility costs out of pocket. That assumes, of course, that allowances will not have to be raised to reflect the out-of-pocket cost to the Service member, thereby passing some of this cost back to DoD. Economic models show the off-base Section 802 housing to be dramatically less costly for the Government only when the payment does not meet the developer's cost. If utilities were included, the cost to build and operate a Section 802 project would be the same as that for a Section 801 project.

Recommendation

Without breakthroughs in construction techniques to reduce costs, the Section 802 program can be effective only when units are built at a rate greater than the market would normally accept in areas in which the cost to build is compatible with allowances. A promising example of such an area is King's Bay, GA, where the population of a county is expected to triple in 5 years. Housing costs can be met by allowances, but all the families are not yet present. The market would ordinarily lag arrivals; the Navy will use Section 802 shelter rent guarantees to see that housing units are built in advance of the sailors' arrivals. We recommend the use of the Section 802 program in low-cost areas and to support base expansions, if economic analyses for the specific installation support the feasibility of a Section 802 project.

SECTION 2667 LAND LEASES

How 2667 Works

Under 10 USC Section 2667, the Secretary of Defense is authorized to lease nonexcess Government land for up to 50 years to advance national security. When applied to housing, Section 2667 permits a contractor to operate a commercial venture on leased Government land. Its use avoids time limits that are shorter than mortgage lengths. Further, since Section 2667 imposes few ground rules, the contracting officers have been given a relatively free hand in developing suitable RFPs. Commonly, the rent structure is limited to Service member housing allowances, and DoD acceptable housing standards have been specified. Competition in aesthetics and quality is encouraged by providing few restraints beyond the minimum cost and standards; as a result, proposals tend to become quality competitions at the specified rent rates.

Challenges and Opportunities

Reliance on community-acceptable housing permits a higher density of units, waiver of wage rates prescribed by the Davis-Bacon Act, and waiver of the DoD regulation that rates all trailer parks as substandard. The waiver to permit trailer parks gave the 2667 program its only success to date. Except on larger bases, communities resist major mobile-home parks; in our case studies, only Fayetteville (Fort Bragg) would have had to concede mobile homes as a community standard. Community agreement is important because city concessions on infrastructure fees and taxes can bridge the difference between allowances and costs. Because the Government provides no occupancy guarantee, the developer must encourage military interest and depend on civilian interest in the event that military families do not fully occupy the housing.

Developers may go beyond the exact terms of the RFP to add other suitable commercial ventures (e.g., convenience stores). Those ventures provide a second source of revenue to offset operating losses from the housing; thus, a better quality project can be built within the RFP rent limitations. It is necessary to overcome the opposition of local business and the Army and Air Force Exchange Service (AAFES), which view such secondary commercial activities as jeopardizing their profits.

The wide range of possible commercial activities that might be used to reduce the rent is impossible to model without a specific development proposal in hand. Table 3 (on page 11) does show the difference between the expected rent and the expected cost to the developer. That difference gives a measure of the project's relative feasibility.

Relative Effectiveness

In that the contractor's reimbursement comes from Service member housing allowances, the costs of this program and the 802 programs are the same. For Section 2667 housing, the Government must also pay School Impact Aid since all such housing must, by definition, be on base.

As with Section 802 housing, the Section 2667 program depends upon the contractor's ability to bring construction costs in line with allowances, although the chance for success is increased by allowing secondary income to subsidize construction costs. Section 2667 projects will be most successful in high-allowance areas.

Even though Section 2667 may well make use of lesser-quality techniques, we have chosen to use similar quality projects in our economic analyses in Appendix F in order to show the relative effectiveness of the different programs. Clearly, if non-standard construction is permitted anywhere, the cost will be reduced. If Section 2667 housing is otherwise infeasible, that option is available to decisionmakers.

Recommendation

We recommend that Section 2667 housing be used in areas in which allowances are high and the installation is able to permit civilian activity to subsidize rentals.

JOINT VENTURES IN PUBLIC HOUSING

How Joint Ventures Work

In a joint venture, DoD provides funding to a local housing authority to assist it in the construction of public housing units. In return, DoD receives assignment rights to a proportion of those units. Such ventures enable DoD to share in economies of scale and in interest-rate reduction accruing from participating in low-income projects.

A joint venture, as used here, is a situation in which DoD provides an appropriated sum to a state or local agency. Those funds can then be converted by the agency into mortgage insurance, seed money for a revolving fund, or a number of other devices through which low-income housing units can be acquired or built. The specific details depend on the agency's financial situation and capacity. Although military leaders resist the inclusion of military families in low-income housing programs because of the poor image of the Services that it projects and a concern over the neighborhoods in which such projects exist, this approach has several advantages. It has been tested in Oakland, CA, although that test more closely resembled our rehabilitation alternative described in Appendix C.

Challenges and Opportunities

One of the early assumptions DoD made about third-party financing for housing was that developers could receive low-interest bonds or tax credits for providing low-income housing. The immediate problem was that this financing cannot be applied to closed-class housing. However, a housing project that provides

free-access housing with some units earmarked for the military may qualify in some areas.

Further cost reductions could be made as the Federal Government cooperates with its partner. Cooperation benefits could take the form of exemption from certain development fees, reduced taxes, or free services such as access roads or utility hookups. With Federal backing, bond financing would be easier. This alternative makes use of city expertise with bond financing and the Federal capacity for providing the initial cash investment.

Most communities have a hard time providing enough public housing. The use of existing housing by the military places indigent civilians out of doors. If, on the other hand, the military assists the city in placing new units into service while building some for itself, all parties benefit.

Finally, civilians are becoming more sophisticated in their ability to halt military activities. Military assistance in a very high-visibility cause, even at a modest level, will pay dividends in terms of the smoother sailing of other activities. A single delayed construction project, such as the Hamilton AFB project mentioned earlier, costs the Federal Government more than \$1 million annually in payroll hours, travel, and overhead with no product in sight.

Effectiveness

We have not developed a cost model for this option. Each of the possible methods — direct spending, revolving funds, and loan guarantees or buydowns — is very complex technically and legally. A limited number of units — perhaps 100 to 600 in a major city — could be obtained. The direct assistance of local governments can provide clear savings over MILCON and Section 801 projects. If pilot projects are to be attempted, DoD should study the many ways in which such programs could be implemented, evaluate their application to specific cities, and attempt to implement two or three methods on a small scale in different locations.

Recommendation

We recommend that DoD participate in joint ventures with state and local governments or agencies to construct public housing for joint use. We recognize that this alternative can produce only a limited number of units. DoD should solicit pilot projects in consultation with major cities in which DoD families are experiencing

difficulty. DoD should fund the two or three most promising submissions as small-scale test projects.

COOPERATIVE HOUSING

How Cooperative Housing Works

In cooperative housing, a Service family purchases ownership shares in an association for a nominal down payment and pays for a mortgage based on current allowances. When the Service member departs the community, the shares are sold for an amount equal to the mortgage value of the next Service member's allowances. The difference would be the equity.

This alternative offers equity to families who cannot afford to buy in the market. It transfers all O&M costs to the military family except to the extent that allowances are affected. Costs may be reduced further by providing the land under Section 2667.

Challenges

We have not modeled this alternative because too many major issues still remain unresolved. The costs of construction must be absorbed somehow because allowances cannot cover those costs; yet, on selling the shares, the developer loses all equity and therefore will not subsidize Service members. This option was offered by Fort Ord in the mobile home park RFP and no contractors expressed interest.

The concept has merit because it provides a benefit at no additional cost to DoD. The initial pilot proposals have not addressed many of the mechanical issues, and the major players – probably nonprofit foundations – have not been identified to give structure to such a project.

Effectiveness

From the Government's view, these alternatives are no different than a Section 2667 program on-base or the free market off-base. The cost is fixed at the level of allowances.

Recommendation

We recommend that DoD conduct an in-depth study of cooperative housing through the use of seminars with industry representatives.

APPENDIX E

THE CASE STUDIES

Our initial assessments of alternatives for providing housing assumed that different alternatives would have strengths and weaknesses that made them particularly suitable to specific locations. The Services identified four communities in which housing problems appeared to be particularly severe and we used those as our case study locations. In this appendix, we describe the applicability of the alternatives to each location.

The original intention when conducting the case studies was to develop a unique strategy for providing housing in each location. The ranking of alternatives remains so stable from one location to another that we recommend the same course of action for all locations.

At each installation, the maximum use should be made of remodeling programs to create denser housing units. Until this is completed, and beyond that if more units are required, installations should contract for long-term leases of residential property. Pilot programs to achieve the rehabilitation of off-base housing, or joint ventures to construct public housing, should be attempted. Where housing shortages remain, available MILCON funding should be directed at the highest-cost areas; otherwise, Section 801 authority should be used to construct new units.

WASHINGTON, D.C.

The initial study was conducted at Andrews Air Force Base, approximately 12 miles east of Washington, DC. The Washington area has always been considered a high-cost tour by military members. Andrews AFB is located beyond the highest-cost sections of Washington, as are most military installations in the area. The excellent highway network and uniform development patterns in all directions from the center make a common model for all Washington area installations reasonable. In fact, they compete for overlapping housing areas already. We are confident that our findings at Andrews AFB are realistic for all installations in the area.

The region around Andrews AFB has little heavy manufacturing, and despite the relatively open spaces, very few people are involved in rural occupations. Most housing developments are aimed at a vast pool of middle-income white-collar workers, many of whom are recent arrivals. The generally higher-ranking military members assigned to the Washington area fit this socioeconomic picture, except that their incomes are lower proportionally than their closest civilian counterparts. Despite Washington's high-cost reputation, the housing deficits experienced are small and apply largely to junior military families.

Elements of Cost

Table E-1 shows the values of the fundamental variables that dictate housing alternative costs. As will be seen in the other case studies, these values generally fall in the middle of those experienced in other communities.

TABLE E-1
WASHINGTON, DC, COST DRIVERS

Element	D.C. value
Land	\$14,000
Fees	None
Location factor for building	0.95
Cost to build	\$54/sf
Civilian O&M*	\$410
Military O&M	\$354
Allowances	\$526
School aid	\$2,296/child/year

Note: O&M = Operations and maintenance.

The Washington area offers some open land, increasing in availability with distance from the center city. Development is continuing in all directions. the few restrictions that have been placed on growth can be overcome by the provision of infrastructure to accompany a project. However, because the economy continues to grow, developers with available land have no incentive to go to extra expense in building units affordable to junior Service members. Housing projects affordable to

such families would be built in areas in which development rights had not been exhausted and no infrastructure costs would be incurred.

The cost of land varies widely through the Washington region with distance from the center. Our selection of \$14,000 per unit (approximately \$300,000 per acre) represents land away from expensive residential communities but well within commuting distance of many military installations.

The School Impact Aid ceilings in Washington are extremely high. The current figure of \$2,296 per Regular-A child is double the national average. Although Washington seems a likely site for the heavily-impacted "Super"-designed school districts (see Appendix C for a discussion of student categories), the Impact Aid legislation provides that out-of-state employment cannot be counted; for instance, no Federal workers in the District of Columbia and Virginia can be counted even though they live in Maryland. Although actual receipts have historically run well below the full entitlements, we must assume that the entitlement might have to be paid in full and we have used 100 percent of the entitlement throughout.

Financial details are the same in Washington as elsewhere. Contractor risk is reduced in being both at the seat of the military structure and in a booming real estate market. The adequate tax bases in the counties around the city have allowed them to avoid the use of burdensome development fees beyond the infrastructure improvements.

Ranking the Alternatives

Using the standard environment explained in Table E-1, we modeled the cost to the Government of each alternative and show the results in Table E-2. Each of the "Ranking of Alternatives" Tables in this Appendix shows the cost of each alternative in millions of present-year dollars, for a 40-year life cycle. A hypothetical 300 unit project was used in order to make comparisons meaningful.

The Section 802 off-base and on-base alternatives, and the Section 2667 alternative were not feasible for the developer.¹ However, the rent differential from cost is relatively small. If more flexibility could be introduced at no cost to the Government, such as through colocated commercial activity, they would be competitive. The respective NPVs for Section 802 off-base, Section 802 on-base, and Section 2667 projects are \$46, \$35, and \$54 million.

TABLE E-2
RANKING OF ALTERNATIVES - WASHINGTON, DC

Alternative	NPV (\$ millions)
Remodel on-base housing	7
Lease existing units	36
Rehabilitate units (off base)	37
Do nothing	39
MILCON	44
801 rent-to-own	52
801 off-base	53
801 on-base	56
Increase VHA	64

Note: NPV = net present value; MILCON = military construction;
 VHA = variable housing allowance.

On-base remodeling, which produces a net savings of \$11 million, is the clear winner. Leasing existing units and subsidizing off-base rehabilitation maintained second place ranking throughout. These high rankings are due to the inherent efficiencies in the programs. Remodeling (on base) and rehabilitation (off base) reduce the gross capital required; leasing offers a means of escaping the real estate speculation spiral without engaging in construction.

The only course of action to approach those three alternatives in cost is the choice of doing nothing. It is slightly more expensive. Because doing nothing is producing unsatisfactory housing, all of the alternatives above represent real savings to the Government and are undeniable sinners.

The remaining alternatives are more expensive because they require construction. They tend to cluster because the equity savings of building on-base property are offset in the Washington area by the extremely high cost potential of the School Impact Aid program and the absence of heavy development fees. The most effective building is through MILCON unless sufficient concessions are granted

¹Sections 801, 802, and 2667 programs are defined in the main text.

to ensure feasibility for Section 2667 projects, which can then be competitive with MILCON.

From a narrower DoD perspective, the cost of on-base alternatives may be reduced by an NPV of approximately \$11 million by ignoring School Impact Aid. This makes them far cheaper than off-base options and competitive with the leasing alternative; however, this cost must be borne by the Federal Government and should not be ignored altogether.

Sensitivity Analysis

The ranking provided in Table E-2 is relatively undisturbed by sensitivity analysis. If the cost of capital drops enough, the Section 2667 allowance cap can cover the debt service costs. That point is approximately where capital is afforded near or at the discount rate. Providing capital at such a rate requires interest subsidies or reduced risk; those concessions will generally occur where the lender has even greater assurance of the property's terminal value. Washington has tight enough zoning and is still sufficiently free for development that the advantage of the land 20 years in the future is not highly valued. Another condition that would make the Section 2667 program feasible is a radical decrease in the cost of labor; that decrease would most likely be realized through the use of manufactured housing, which might conversely cause a higher interest rate to be assigned.

Under lower inflation than exists today, rehabilitation becomes more favorable than leasing because part of the cost is based on allowances, which remain lower. Reduction of inflation below 4 percent over 40 years is considered extremely unlikely. If the discount rate is permitted within 3 percent of the base inflation rate, leasing becomes more expensive than rehabilitation.

The major finding is that most of the construction alternatives are competitive. The effort required to make a given alternative work, therefore, is a matter of closing the gap through small concessions.

Local Considerations

The extensive service industry in the Washington area, combined with reasonable costs of living in all aspects except housing, make it improbable that

secondary business income to subsidize Section 802 and Section 2667 housing can be accepted.

The booming economy makes it unlikely that major successes will be experienced with leasing units; it also ensures that increasing VHA will continue to be the most expensive alternative. However, it does offer hope that Section 801 initiatives will be well-received in anticipation of terminal values.

Not everyone in Washington is caught up in the economy. The District of Columbia has numerous properties that would be excellent candidates for rehabilitation; rehabilitation would also be well-received by private citizens in some of the areas with a stock of older, larger houses.

Recommendations

The Washington area offers a good chance of success for most alternatives. The small housing deficit makes it a good testing ground. The DASD (Installations) should use the Washington area to initiate some pilot projects for rehabilitation and remodeling. The Military Departments should purchase land for construction projects now while it is still affordable.

THE SAN FRANCISCO BAY AREA

The San Francisco Bay area presents a housing problem even to civilians. The cost of land is high and the radius of development area is restricted by the geography of water and mountains; potential construction is further deterred by tight controls in most communities using growth restrictions and extremely high surrogate taxes in the form of fees. These constraints force the cost of housing to very high levels.

In many areas, legitimate concerns of overcrowding make new construction impossible. In such communities, alternatives that avoid building in favor of fixing or finding units will prosper. It is important to recognize that, fairly or not, the pressures that these cities can bring to bear have the power to halt even on-base MILCON projects.

The politics of the Bay area make cooperation with the military a low item on the agenda of local communities and citizen groups. In this type of environment, use of small programs that can defuse any natural animosity may make major housing initiatives possible. Every effort must be exerted to structure mutually-

advantageous situations and to relieve legitimate concerns through aggressive marketing.

DoD has a major housing shortage in the Bay area. The current deficit of more than 4,000 units may well be doubled if the planned homeporting of a battleship and its auxiliary forces occurs.

Element of Cost

In almost every way, the Bay area shows the highest costs (Table E-3). Service members are fortunate that their allowances are among the highest in the nation; unfortunately, those allowances are still some \$175 a month below market rates.

TABLE E-3
SAN FRANCISCO AREA COST DRIVERS

Element	DC value	San Francisco value
Land	\$14,000	\$21,000
Fees	None	\$15,000
Location factor for building	0.95	1.2
Cost to build	\$54/sq. ft.	\$69/sq. ft.
Civilian O&M	\$410	\$460
Military O&M	\$354	\$457
Allowances	\$526	\$634
School aid	\$2,296/child/year	\$1,696/child/year

The limited land available is naturally expensive; estimates vary widely in the area from \$200,000 to over \$1 million per multifamily acre. We selected a midrange of \$21,000 per unit, or roughly \$25,000 per unit. Local estimates led us to select \$15,000 as a probable median.

The challenges of ocean and rock not only restrict space but also make the provision of utilities to the region very expensive. The construction of the buildings is made more expensive by either steep contours or silty bottomlands, transportation costs for most material, and high labor costs.

Ranking the Alternatives

Using the standard environment, the alternatives resulted in the ranking shown in Table E-4. That ranking is robust under the sensitivity analysis applied in Appendix B.

TABLE E-4
RANKING OF ALTERNATIVES - SAN FRANCISCO BAY AREA

Alternative	NPV (\$ millions)
Remodel on-base housing	7
Lease existing units	47
Rehabilitate units	48
Do nothing	50
MILCON	50
801 rent-to-own	58
801 on-base	64
801 off-base	70
Increase VHA	72

As is the case in the other three areas studied, the Section 802 (\$45 million on base; \$48 million off base) and Section 2667 (\$48 million) alternatives were economically unfeasible. The large rent shortfall (shown in Table 3) makes it unlikely that secondary activities (commercial ventures) can generate sufficient income to offset this differential. In San Francisco, because of the extremely high market rents and high allowances that are paid today, the alternatives are much closer together; Section 802 and Section 2667 projects offer little savings to the Government to compensate for the added risk.

Local Considerations

The cities in the Bay area are some of the oldest on the West Coast, and much of this housing has a great need for renovation. The already large gaps between social classes are growing wider, which suggests that increasing VHA will be of limited

usefulness while community-directed alternatives such a rehabilitation, leasing buildings, and joint ventures could be successful.

DoD-owned land in the Bay area is generally in full use, reducing the feasibility of MILCON and other on-base alternatives. Because of the local political climate, commanders are extremely cautious about allowing significant numbers of civilians to reside on base in Section 802 or Section 2667 projects. Nonetheless, the cost dictates that maximum possible use be made of on-base housing projects if construction is needed.

Recommendations

Installations in the San Francisco area should look closely at the potential for remodeling on-base units as described in the main text. Although off-base rehabilitation (possibly in conjunction with a lease) does not produce major savings, it would help in gaining a sense of partnership with the community and should be pursued for that reason. On-base land should be used for construction alternatives, preferably Section 802 or Section 26567 housing although it is doubtful that sufficient commercial activity can be supported to make more projects feasible. Otherwise, MILCON offers major cost savings over any of the Section 801 versions.

SAN DIEGO

While San Diego is an expensive area by outside standards, it is not by California standards. Areas near the city cost more because the mountainous terrain stretches commuter suburbs along limited approach corridors; nonetheless, because of the excellent highway network, land out to the 30-mile limit is well within a 1-hour commuting time. Many of the existing communities have begun to impose construction moratoria; less-developed areas 10-15 miles out are not as restrictive.

Local prices are considerably below those in San Francisco, as are Service members' housing allowances. True costs of living cannot be assessed in the Variable Housing Allowance (VHA) formula, because a large number of Service personnel live in nearby Mexico. In addition to complicating the VHA, this phenomenon poses readiness issues and is viewed as a severe detriment to morale.

San Diego is unique in that the military installations have no available land on which to build housing; thus, even MILCON engenders a real, cash cost of land. It is

also unique in that although it is a major metropolis, the U.S. Navy is a dominant factor in the local economy. Area communities house over 30,000 military families, but another 10,000 are still unable to find suitable housing.

In the past, San Diego installations have been fortunate to have money available at the right moment to buy entire developments in financial difficulty. While that option exists for any MILCON transaction, the procurement process is so cumbersome that the window of opportunity for such an option is only about 3 weeks out of a 2-year process. It also depends on a coincidental depression in the local housing market. Current overbuilding maintains the vacancy rate and makes purchases and leasing very viable in this area.

Generally, the new housing stock in San Diego limits the scope of traditional rehabilitation efforts. Growth of service businesses have made older commercial buildings available; while we were in California, the city was trying to sell a large complex that the Navy Public Works Center estimated could have provided several hundred units. However, funds were not in place to take advantage of that opportunity.

Cost Elements

San Diego costs (Table E-5) approximate those of Washington, DC.

TABLE E-5
SAN FRANCISCO AREA COST DRIVERS

Element	DC value	San Francisco value
Land	\$14,000	\$13,000/unit
Fees	None	\$8,000/unit
Location factor for building	0.95	1.1
Cost to build	\$54/sq. ft.	\$63/sq. ft.
Civilian O&M	\$410	\$346/unit/month
Military O&M	\$354	\$269/unit/month
Allowances	\$526	\$492
School aid	\$2,296/child/year	\$1,696/child/year

Land costs vary widely with distance from the center of the city. We selected \$13,000 as representing the cost in the area in which a MILCON project is now under construction, approximately 12 miles from the Navy Yard.

Although DoD's land in San Diego is all in use, DoD is still fortunate in that it owns extremely valuable parcels. The Navy has been able to save considerable sums through well-conceived land trades. Because its available land is dwindling, the Navy's ability to continue such trading is unlikely to last much longer without major realignment of its activities.

Other costs are very similar to those experienced in Washington with the exception of fees which, while substantial, are only slightly more than half those of San Francisco.

Ranking the Alternatives

The alternatives for San Diego remain the same rankings as those for Washington and San Francisco. The relatively low housing allowances drop the rehabilitation alternative below leasing of existing units although both are very close (Table E-6).

TABLE E-6
RANKING OF ALTERNATIVES - SAN DIEGO

Alternative	NPV (\$ millions)
Remodel on-base housing	5
Lease existing units	36
Rehabilitate units	35
Do nothing	37
MILCON	42
801 rent-to-own	50
801 on-base	53
801 off-base	54
Increase VHA	59

As in all cases, the Section 802 (\$33-\$41 million) and Section 2667 (\$40 million) alternatives were economically infeasible. A wider spread is seen in San Diego between the net cost of the Section 802 on-base and off-base options because the Government must pay cash for the land to be used in the "on-base" 802 and 2667 alternatives. The spread between allowances and costs, at \$300-\$500, requires extensive concessions to make these concepts feasible.

The MILCON alternative in San Diego does include the cost of land acquisition. The 20 percent savings that is realized through avoidance of debt service charge and out-year return of the property to the owner is clearly demonstrated.

Local Considerations

Until civilian construction activity diminishes, San Diego, is an excellent market for leasing or purchasing existing units. The opportunity for rehabilitation, while not eliminated, is small because most units are quite new.

Authority to purchase stems from the MILCON authorization. The great cost differential of MILCON from other construction alternatives should lead DoD to attempt to obtain MILCON authority each year; MILCON funding would also provide a constant pool of funds available for cost-saving purchases in lieu of new construction.

San Diego's construction boom may not end until housing is built to the limit in all areas within reasonable commuting distance. Once the limit is reached, land prices will escalate rapidly and civic constraints will be imposed on building. These constraints are starting to appear now close to the city. Land purchases would be excellent investments.

Recommendations

As always, remodeling units on base will provide net savings to the Navy, and rehabilitation of off-base commercial units should be encouraged wherever possible. The best strategy for San Diego installations, however, is to engage in leases while vacancies persist. Failing this, MILCON is not much more expensive, even with the need to purchase the land. In any construction program, the land has to be

purchased; it is important that the Navy define its out-year needs now and begin to purchase land while it is available and less costly.

Section 802 and 2667 alternatives are not sound in San Diego. Land must be purchased and turned over for largely commercial use to reduce the rent to the allowance cap. The complexity of such transactions make them difficult to rely on as the major solution.

FORT BRAGG, N.C.

The real anomaly about Fort Bragg is that there is a housing deficit. Fayetteville, NC, is a rural area in which the military is, by far, the largest influence on the economy. The base population has been relatively stable for decades, and most of the Service members are drawing jump pay or flight pay and thus are relatively better off than Service members at other installations.

The cost of living in Fayetteville is significantly lower than that at any of the other installations studied. In determining affordable housing, the ceiling includes utility costs as well as rent; surprisingly, the cost of utilities is extremely high, averaging over \$200 per unit per month, basically because of inadequate insulation in cheaper units. As a result, although local rentals are plentiful within the monthly housing allowance of \$365, the total cost is well above the maximum out-of-pocket cost criterion.

Fayetteville as a community has no choice but to have excellent relationships with the military. Fort Bragg is 10 miles from the city center, but the city exists mainly to support the Fort. Recently arrived manufacturing firms located their facilities on the opposite side of town from the Fort, and the commercial activities in the center of the city have moved to the periphery. Those moves leave a core of buildings well suited for rehabilitation. Substandard residential units outside the city consist of dilapidated mobile homes or farm shacks that cannot be repaired.

Development is proceeding in all directions around the Fort. Because of the limited growth of the economy, that development is occurring in an orderly manner so that there is neither a shortage nor an excess of housing. It is improbable that the base, which enjoys priority status in the Army, will be affected by cuts; on the other hand, if cut-backs did occur, the developed units would have no value. This condition

suggests that long-term guaranteed cash flows would be essential to convincing developers to put up large new projects.

Cost Elements

The rural nature of Fort Bragg is reflected in its low costs (Table E-7).

TABLE E-7
FORT BRAGG AREA COST DRIVERS

Element	DC value	Fort Bragg value
Land	\$14,000	\$675/unit
Fees	None	None
Location factor for building	0.95	0.85
Cost to build	\$54/sq. ft.	\$46/sq. ft.
Civilian O&M	\$410	\$233/unit/month
Military O&M	\$354	\$256/unit/month
Allowances	\$526	\$365
School aid	\$2,296/child/year	\$1,696/child/year

Land costs are misleading. Most land within commuting distance was acquired long ago by major developers and is not for sale except at retail, at around \$4,000 per lot.

Military O&M is higher at Fort Bragg than civilian costs, not because of inefficiency but because Bragg has chosen to put money into major projects that do not fit into the base budgets of other installations.

School aid costs are the same as at most other installations, but those costs have a disproportionate effect at Fort Bragg because all the other costs are so much smaller.

Ranking the Alternatives

The alternatives retain the same rankings as those for the other sites studied (Table E-8). The relatively high school impact aid fees make the Section 801 off-base alternative extremely competitive. The savings arising from remodeling on-base

units are limited by the small number of suitable units. Because market rents are so low today, we can expect that locking them in as close to that level as possible is very inexpensive.

TABLE E-8
RANKING OF ALTERNATIVES - FORT BRAGG

Alternative	NPV (\$ millions)
Remodel on-base housing	10
Lease existing units	14
Rehabilitate units	22
Do nothing	24
Increase VHA	29
801 off-base	32
MILCON	33
801 rent-to-own	38
801 on-base	38

As always, the Section 802 (\$22-\$27 million) and Section 2667 (\$22 million) alternatives were economically unfeasible. The spread between allowances and costs, at \$150-\$225, makes it likely that some mechanisms could be devised to make these concepts feasible.

Fort Bragg is the only area studied in which reducing the deficit by increasing VHA is competitive. That approach is competitive because no great difference exists between current allowances and market rents. However, Fort Bragg is also the only area we studied in which the military is totally dominant; thus, it is entirely likely that increases in allowances would be followed directly by increases in rents.

The impact of increasing VHA is not appreciated in considering merely our 300 model units. Fort Bragg has tens of thousands of soldiers living off base, and the VHA increase would take effect for everybody. This system might work once major successes had been scored with other alternative so that vouchers (direct reimbursements) would be issued for only a few units.

Local Considerations

Fayetteville is located in a generally rural area with a strong affinity for the military. Few objections would be placed in the way of any alternative housing program the Army might adopt, unless the local economy is significantly threatened.

The low cost of living suggests that it would be difficult for DoD to justify a large MILCON at Fort Bragg. Extensive building activity in the area would have adverse consequences, and the major developers would certainly raise an outcry. The community exists largely to provide retail support to the base; extensive secondary activity to support Section 802 and Section 2667 projects would be vigorously opposed.

Recommendations

We recommend that the Army attempt to enter into large leases for projects at current market rates. If that authority is not available, the leases should be obtained in the form of Section 801 off-base leases. The alternative of rehabilitating commercial units downtown should be pursued.

We do not recommend increasing VHA rates to meet market rents.

APPENDIX F
SUMMARY OF EXISTING ALTERNATIVE PROJECTS

Location	Service	Units	On base	Status
Section 801 Build-to-Lease				
Ft. Polk, LA	Army	300	No	Complete success
Ft. Hood, TX	Army	300	Yes	Financing delay; now complete
Norfolk, VA	Navy	300	Yes	Complete success
Eielson AB, AK	USAF	300	Yes	Complete success
Hanscom Field, MA	USAF	163	Yes	Expensive success
Earle, NJ	Navy	300	Yes	Blocked - ecology
Ft. Wainwright, AK	Army	400	Yes	Complete success
Ft. Drum, NY	Army	1,400	No	Qualified success
Twenty-Nine Palms, CA	USMC	200	No	Delayed - finance permits
Ft. Polk, LA	Army	300	No	Underway; success
Ft. Drum, NY	Army	300	No	Underway; success
Andrews AB, MD	USAF	200	No	No land option bids
Mayport, FL	Navy	200	No	Delayed - finance, ecology
Staten Island, NY	Navy	200	No	Delayed - no bids under ceiling
March AB, CA	USAF	200	No	Delayed - financing
Castle AB, CA	USAF	200	No	Need expired
Goodfellow AB, TX	USAF	200	No	Success after 802
San Diego, CA	Navy	200	No	No suitable land options
Section 802 Rental Guarantee				
Ft. Campbell, KY	Army	300	No	Performance problem
Ft. Rucker, AL	Army	300	No	Performance problem
Earle, NJ	Navy	300	No	No bids; became 801
Long Beach, CA	Navy	300	No	No bids
Norton, CA	USAF	300	No	Performance problem
Goodfellow, TX	USAF	300	No	No bids; became 801
Ft. Hood, TX	Army	500	No	Performance problem
E. St. Louis, MO	Army	100	No	No bids
Section 2667 Land Leases				
Ft. Ord, CA	Army	200	Yes	Success in trailers
March AB, CA	USAF	300	Yes	Still under RFP
Ft. Ord, CA	Army	300	Yes	Delayed by Army-Air Force Exchange Service objection

Note: "Performance problem" indicates a project for which a contract has been awarded but work has not begun, and is unlikely to start soon.

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